IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No. 10/772,071
Confirmation No. 1712

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2/20/2007 /Pamela Gerik/
Date Pamela Gerik

DECLARATION OF CHARLES HUSTON UNDER 37 C.F.R. § 1.132 REGARDING FILE HISTORY U.S. PAT. NO. 5,627,549

I, Charles D. Huston, hereby declare and state that:

1. I am the attorney of record in the captioned case.

2. Exhibit A attached hereto is a copy of the file history of U.S. Pat. No. 5,627,549 obtained from Specialized Patent.

3. The parent Serial No. 08/282,893 was filed July 29, 1994. A continuation was filed January 16, 1996 and begins at page 78 in the attached Exhibit A. A Preliminary Amendment was filed January 16, 1996 and begins at page 82 in Exhibit A.

4. The Office Action of Oct. 25, 2006 in paragraph 4 cites claims 1-2 of Dimitiradis et al as providing support for "providing time and location sensitive advertising information to a user, wherein the position, as disclosed in the specification, is derived from GPS."

5. While the specification of U.S. Pat. No. 5,627,549 (Park) may be relevant to the examination of the captioned application, it appears the subject matter cited in paragraph 4 of the Office Action of Oct. 25, 2006 is new matter and not prior art to the captioned application.

6. I declare that all statements made herein of my own knowledge are true, and that all statements of my own belief are believed to be true, and further that these statements were made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under the United States Code, Title 18 § 1001, and that such willful false statements may jeopardize the validity of the patent, and any reexamination certificate issuing thereon.

Feb. 20, 2007	/Charles D. Huston/
Date	Charles D. Huston

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US Prosecution File History: 5,627,549 (Including 08/282,893)

Your Reference: 5863-00203

342-352

ISSUE CLASSIFICATION		
342	357	

[redacted]

5627549

UTILITY SERIAL NUMBER	PATENT DATE	PATENT NUMBER
08/585,604	MAY 06 1997	5627549

SERIAL NUMBER	FILING DATE	CLASS	SUBCLASS	GROUP ART UNIT	5627549
08/585,604	01/16/96	342	357	2202	

APPLICANTS

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MICHAEL

CONTINUING DATA********

VERIFIED

TMB

THIS APPLN IS A CON OF 08/282,893 07/29/94 now abandoned

DK

3/12/97

FOREIGN/FCT APPLICATIONS********

VERIFIED

TMB none.

FOREIGN FILING LICENSE GRANTED 02/06/96

Foreign priority claimed 35 USC 119 conditions met	AS FILED	STATE OR COUNTRY	SHEETS DRWGS.	TOTAL CLAIMS	INDEP CLAIMS	FILING FEE RECEIVED	ATTORNEY'S DOCKET NO.
Verified and Acknowledged Examiner's Initials		OR	7	14	3	$750.00	P126-FWC

ADDRESS

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TITLE

DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

U.S. DEPT. OF COMM./ PAT. & TM—PTO-436L (Rev.

11-29-96

PARTS OF APPLICATION FILED SEPARATELY

Applications Examiner

NOTICE OF ALLOWANCE MAILED

11 26 96

Assistant Examiner

CLAIMS ALLOWED

Total Claims	Print Claim
2	1

ISSUE FEE

Amount Due	Date Paid
1240	4/7/97

Theodore M. Blum

THEODORE M. BLUM
EXAMINER
GROUP ART UNIT 222
Primary Examiner

DRAWING

Sheets Drwg.	Figs. Drwg.	Print Fig.
06	7	2

ISSUE BATCH NUMBER G92

Label Area

PREPARED FOR ISSUE

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Form PTO-436A
(Rev. 8/92)

ISSUE FEE IN FILE BC

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UTILITY SERIAL NUMBER	PATENT DATE	PATENT NUMBER
08/282893		

SERIAL NUMBER	FILING DATE	CLASS	SUBCLASS	GROUP ART UNIT	EXAMINER
08/282,893	07/29/94	342	357	2202	BLUM

APPLICANTS

MICHAEL C. PARK, PORTLAND, OR.

CONTINUING DATA********
VERIFIED

FOREIGN/PCT APPLICATIONS********
VERIFIED

FOREIGN FILING LICENSE GRANTED 08/25/94

Foreign priority claimed 35 USC 119 conditions met	Verified and Acknowledged	Examiner's Initials	AS FILED	STATE OR COUNTRY	SHEETS DRWGS.	TOTAL CLAIMS	INDEP. CLAIMS	FILING FEE RECEIVED	ATTORNEY'S DOCKET NO.
☐ yes ☐ no ☐ yes ☐ no				OR	7	14	3	$710.00	P126

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BEAVERTON OR 97006

TITLE

DUAL CHANNEL ADVERTISING REFERENCE VEHICLE LOCATION

U.S. DEPT. of COMM.-Pat. & TM Office — PTO-436L (rev. 10-78)

PARTS OF APPLICATION FILED SEPARATELY		Applications Examiner
NOTICE OF ALLOWANCE MAILED		CLAIMS ALLOWED: Total Claims / Print Claim
	Assistant Examiner	
ISSUE FEE: Amount Due / Date Paid		DRAWING: Sheets Drwg. / Figs. Drwg. / Print Fig.
Label Area	Primary Examiner	ISSUE BATCH NUMBER
	PREPARED FOR ISSUE	

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INITIALS
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CONTENTS

Date Received or Mailed

	1.	Application ____ papers.	
	2.	Change of Address	9-29-94
3/17	3.	Rejection (3mos)	3/21/95
	4.	Interview Summary	7/6/95
	5.	Amdt A	6-19-95 6-15-95
7/18	6.	Final Rej 3 mos	7-18-95
	7.	Certified Copy (Moot)	7-31-95
	8.	Ext. Time	11-17-95 Date 4 mo
	9.	Notice of Appeal	11-17-95
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PATENT APPLICATION

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CONTENTS

Date Entered or Counted			Date Received or Mailed
	1.	Application 7 Pts. papers.	
		10 Dr. B	1/16/96
		11 Dr. C	1/16/96
6/19		12 Reject 3 months	6/21/96
		13 Req. Ext. Time	11-8-96 Grtd 2 mos.
		14 Amdt D	11-8-96
11/24		15 P.T.O. L-37	11-26-96
		16 P.T.O. L-85	11-26-96
2-4-97	9.	Formal Drawings (6 shts) set 1	12-20-96
	10.	PTO Grant MAY 06 1997	
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INDEX OF CLAIMS

Claim	Date
Final / Original	
1	3/16/95
2	[illegible]
3	✓
4	[illegible]
5	✓
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7	✓
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SYMBOLS

✓ ..... Rejected
– ..... Allowed
- (Through numbers) Canceled
+ ..... Restricted
N ..... Non-elected
I ..... Interference
A ..... Appeal
O ..... Objected

Claim	Date
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Class	Sub.	Date	Exmr.
342	357	3-15-95	JMB
364	449		
340	996		
UPDATED		7-17-95	JMB

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.

SEARCH NOTES

	Date	Exmr.

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* U.S. GOVERNMENT PRINTING OFFICE: 1992-327-409

[redacted] NT NUMBER

ORIGINAL CLASSIFICATION

CLASS	SUBCLASS
342	357

APPLICATION SERIAL NUMBER
08/535604

APPLICANT'S NAME (PLEASE PRINT)
MICHAEL C. PARK

IF REISSUE, ORIGINAL PATENT NUMBER

CROSS REFERENCE(S)

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)
364	449.1
340	996

INTERNATIONAL CLASSIFICATION

H	04	B	7	185	
G	01	S	5	02	

GROUP ART UNIT: 2202

ASSISTANT EXAMINER (PLEASE STAMP OR PRINT FULL NAME)

PRIMARY EXAMINER (PLEASE STAMP OR PRINT FULL NAME)
THEODORE M. BLUM
EXAMINER

TO 270 (REV. 5-91)

ISSUE CLASSIFICATION SLIP GROUP ART UNIT 222

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

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POSITION		ID NO.	DATE
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EXAMINER		258	2/5
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INDEX OF CLAIMS

Claim	Date
Final / Original	
1	11
2	15
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SYMBOLS

- ✓ ..... Rejected
- = ... Allowed
- - (Through numerals) Canceled
- W ..... Restricted
- N ..... Non-elected
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Class	Sub.	Date	Exmr.
342 364 340	357 449 996	UPDATED FROM SN: 08/282,893	TMB
UPDATED		11-25-96	TMB

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
342 364 340	357 449 996	11-25-96	TMB

SEARCH NOTES

	Date	Exmr.

(RIGHT OUTSIDE)

PATENT APPLICATION SERIAL NO. 08/282893

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

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PTO-1556
(5/87)

DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

Background of the Invention

The present invention relates generally to vehicle information systems, and particularly to vehicle information systems providing information relevant to current vehicle location.

A variety of traffic related information is now available for use in aiding vehicle travel, especially in urban road networks. A travel information device likely to be soon more commonly incorporated into vehicles is a vehicle position detecting system, e.g., the well known global positioning system (GPS) providing satellite broadcast to determine location of a receiving GPS device. Vehicles with GPS capability, therefore, have the very useful feature of tracking current vehicle position.

Given access to current vehicle location, i.e., longitude and latitude values, a proposed information system provides vehicle position relative to a map representation of a given region, e.g., a map display of city streets with vehicle position indicated by street location rather than longitude and latitude position. Thus, a digital map database further supports vehicle

position display by reference to more meaningful information, i.e., by reference to a street map. To be of value, however, the digital map database must be current and comprehensive, i.e., have information relevant to wherever a vehicle may be used.

Massive digital map databases are, however, inherently expensive and difficult to include in mass produced products such as is desirable in a GPS-capable consumer product. Digital map databases require license fees, large amounts of memory, frequent and expensive revision, and generally cannot be comprehensive enough to allow use throughout the entire world. It is not economically feasible to provide in an inexpensive consumer product a digital map database covering the entire world, or at least a significant geographic region. If the device is prepared for use throughout the world, an incredibly massive digital map is required giving rise to significant cost and maintenance requirements. If only selected geographic regions are incorporated into the digital map, the device cannot be used outside such geographic regions without post-manufacture modification or manipulation of numerous storage devices, e.g., a library of CD-ROM discs.

It would be desirable, therefore, for a vehicle information device to be usable in any geographic area as manufactured yet still maintain an ability to indicate vehicle position information beyond merely longitude and latitude. In particular,

people need more meaningful information than merely longitude and latitude, yet a massive digital map is difficult to justify in the context of relatively inexpensive consumer products. The need for current vehicle position is most typically a need to know current vehicle position relative to a location of interest. Unfortunately, customizing massive digital databases to provide reference to individual vehicle operator locations of interest is impractical. It would be desirable to avoid a requirement of procuring and maintaining in the travel information device a massive digital database, yet maintain an ability to reference geographic locations. The subject matter of the present invention provides such a vehicle travel information device.

Summary of the Invention

In accordance with the present invention, a travel information device in a vehicle includes a vehicle position detecting device and collects vehicle position information while also collecting data relevant geographic points of interest to provide a display indicating position of a point of interest relative to a current vehicle location.

In the illustrated and preferred form of the present invention, collecting information relevant to geographic points of interest is by radio signal data broadcast in conjunction with radio signal voice broadcast, such as advertising, whereby a user

interrogates a device under the present invention to collect by data broadcast detailed information concerning an advertisement of interest provided by a companion voice broadcast. The data broadcast includes precise location information providing, in conjunction with current vehicle position, a basis for presenting a display graphically showing relative position between the geographic point of interest, such as the location of an advertiser, and the current vehicle location.

According to one aspect of the present invention, storage of information relative to geographic points of interest builds for the user a personal electronic reference for later selectively displaying such information, including ability to selectively display a representation of location relative to a then current vehicle position.

The subject matter of the present invention is particularly pointed out and distinctly claimed in the concluding portion of this specification. However, both the organization and method of operation of the invention, together with further advantages and objects thereof, may be best understood by reference to the following description taken with the accompanying drawings wherein like reference characters refer to like elements.

Brief Description of the Drawings

For a better understanding of the invention, and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings in which:

FIG. 1 illustrates a vehicle information system, a given road network, and a vehicle travelling within the road network and carrying a travel information device according to a preferred form of the present invention.

FIG. 2 is a block diagram of the travel information device for the vehicle of FIG. 1.

FIG. 3 illustrates the front panel controls and display of the travel information device of FIG. 2 as viewed by the operator of the vehicle of FIG. 1.

FIG. 4 illustrates by flow chart a first method of collecting data for storage by the travel information device wherein the user hears by voice broadcast information of interest an selects corresponding data broadcast information for storage.

FIG. 5 illustrates by flow chart an alternative method for collecting information from the data broadcast whereby the operator designates collection criteria and the travel information device automatically collects qualifying data broadcast information.

FIG. 6 illustrates by flow chart programming for a radio broadcast system coordinating or associating voice radio broadcast with data radio broadcast.

FIG. 7 illustrates by flow chart programming of the travel information device of FIG. 1 for scanning or reviewing of information stored therein.

Detailed Description of a Preferred Embodiment

In FIG. 1, a vehicle 10 travels within a road network 12. Network 12 includes main arterial roadways as illustrated, but as may be appreciated would be significantly more complex. For the present illustration, it will be understood that vehicle 10 travels throughout road network 12 along any selected travel route. Furthermore, the operator of vehicle 10 travels within road network 12 to and from geographic points of interest 14, individually designated 14a-14d. While only several such geographic points of interest 14 are indicated in FIG. 1, it will be understood that any number of such geographic points of interest 14 may exist within road network 12. Furthermore, geographic points of interest 14 for one individual vary relative to that of another individual. Accordingly, reference herein to geographic points of interest 14 shall be taken to be locations of interest to a particular person.

Also illustrated in FIG. 1, radio broadcast system 20 provides a combined radio signal voice broadcast 22 and radio signal data broadcast 26. While illustrated as a single radio broadcast system 20, it will be understood that voice broadcast 22 and data broadcast 26 could originate from separate radio signal broadcast facilities. Under the preferred form of the present invention, however, voice broadcast 22 and data broadcast 26 originate from a common FM radio source as provided under the "Gaskill" paging system. The present invention may be implemented according to many paging system protocols, but as illustrated herein operates under the time-division multiplexed protocol of the Gaskill paging system, as illustrated in U.S. Patent Nos. 4,713,808 and 4,897,835. The disclosure of U.S. Patent Nos. 4,713,808 and 4, 897,835 are incorporated herein fully by reference thereto.

The Gaskill paging system and associated receiving devices provide an inexpensive, highly battery-efficient and highly miniaturized paging device which, under the illustrated embodiment of the present invention, constitutes a data radio signal receiver 62 (FIG. 2) as a conduit for data broadcast 26 delivery to device 40.

Generally the Gaskill paging system uses FM radio signal transmission facilities to broadcast within a side-band frequency paging signal data packets according to a time-division

multiplexed protocol. Thus, voice broadcast 22 comprises the normal FM radio signal broadcast and data broadcast 26 represents the side-band paging system broadcast.

It will be understood, therefore, that radio broadcast system 20 provides coordinated voice and data by radio signal. In particular, radio broadcast system 20 receives voice advertisement and data message information 28, e.g., an advertising subscription, and integrates the data message portion thereof into other incoming paging system data packets originating from a Gaskill paging system clearinghouse 30. In this manner, radio station 20a coordinates or associates voice and data broadcasts 22 and 26, respectively. As may be appreciated, however, the data message portion of information 28 could be routed through clearinghouse 30, in which case radio station 20a associates a voice broadcast 22 with a data broadcast 26 originating entirely from clearinghouse 30. Such association may be provided by a number of arrangements, but under the illustrated form of the present invention, association of voice broadcast 22 and data broadcast 26 shall be by time relation, e.g., concurrently broadcast, broadcast in close time relationship, or at given time offset.

Vehicle 10 includes a travel information device 40 receiving by way of antenna 42 the voice broadcast 22 and data broadcast

26. Thus, device 40 receives conventional FM voice broadcasts and paging data broadcasts the Gaskill paging system protocol. In this manner, device 40 receives associated voice and data broadcasts whereby an operator of vehicle 10, upon hearing a voice broadcast of interest, captures the associated data broadcast to collect and store within device 40 detailed information, i.e., a data record including longitude and latitude, for a geographic point of interest 14.

FIG. 1 also illustrates a global position system (GPS) satellite 50 providing transmission 52. Details and use of GPS transmission and the collection of such transmission to determine location of a GPS receiver are well known. Use of GPS transmission 52 under the present invention is by incorporation of a global position system receiving device into travel information device 40 collection of a current vehicle position therewith as described more fully hereafter.

Thus, travel information device 40 receives several channels of information. First, voice broadcast 22 provided by radio broadcast system 20 provides to the vehicle operator a stream of voice information potentially including reference to geographic points of interest 14, i.e., advertisers located within road network 12. Second, data broadcast 26, as provided in association with voice broadcast 22, provides further detailed text message information captured selectively by device 40, e.g.,

when commanded by the operator of vehicle 10. This establishes, among other detailed information, a precise location for a geographic point of interest 14. Third, the global position system transmission 52 provides a current vehicle location and, therefore, a basis for presenting location of geographic points of interest 14 relative to current vehicle position.

As described more fully hereafter, device 40 maintains a database containing a collection of data records obtained from data broadcast 26. Each data record corresponds to a geographic point of interest 14, and device 40 displays a vector, i.e., distance and direction, indicator illustrating the relative position of a given geographic point of interest 14 relative to current vehicle location. In this manner, device 40 constructs and maintains information specific to a user of device 40, i.e., maintains information relative to geographic points of interest 14 selected by the operator of vehicle 10, and further provides meaningful position information beyond longitude and latitude for such points of interest 14 without reference to a massive digital map database of the road network 12. Device 40 maintains current information relative to a given geographic region and specific to selected geographic points of interest 14. Under one aspect of the present invention, such geographic points of interest 14 correspond generally to locations of advertisers providing, by way of radio broadcast system 20, both voice information in broadcast 22 and detailed message or text data in broadcast 26.

This allows listeners to later reference such data and locate the corresponding geographic point of interest 14 relative to a then current vehicle position.

FIG. 2 illustrates in block diagram travel information device 40. In FIG. 2, a microprocessor 60 orchestrates generally operation of device 40. Data radio signal receiver 62 couples antenna 42 to microprocessor 60. As contemplated under the preferred form of the present invention, data radio signal receiver 62 comprises essentially a paging system receiver operating under the Gaskill paging system. Thus, the Gaskill system paging device provided as receiver 62 serves as a data terminal collecting data broadcast 26 and providing to microprocessor 60 detailed information associated with, for example, an associated voice advertisement broadcast in voice broadcast 22. A voice radio receiver 64, also coupled to antenna 42, receives the voice broadcast 22 and delivers a voice signal 66 to an amplifier 68 driving a speaker 70. Microprocessor 60 tunes voice radio receiver 64 by way of a tune control 72. Thus, microprocessor 60 selects a radio signal voice broadcast 22 by tune control 72 and, by way of volume control 74 applied to amplifier 68, causes presentation of the corresponding voice broadcast on speaker 70.

A global position system receiver 80 receives the transmission 52 from global position system satellite 50 and

delivers to microprocessor 60 a current vehicle location 82. In this manner, microprocessor 60 requests from global position system radio receiver 80 a current vehicle location and receives in return the current vehicle location 82.

Microprocessor 60 receives other vehicle information. For example, a fuel gauge sensor 90 provides a fuel remaining input 92 to microprocessor 60.

Microprocessor 60 drives a display 100. Display 100 presents, for example, tuning and station selection information relative to the voice radio receiver 60 to provide an FM radio capability wherein the operator of vehicle 10 manipulates input controls 102, i.e., volume, station select, and other controls described more fully hereafter, to listen to a selected voice broadcast 22. Display 100 further presents, as described more fully hereafter, data relevant to stored geographic points of interest 14 and also graphic indication, i.e., a vector indicating distance and direction, of a selected geographic point of interest 14 relative to the current vehicle location.

A compass 104 provides a vehicle orientation input 106 to microprocessor 60. Device 40 uses the current vehicle position, i.e., as provided by vehicle location 82, and also the current vehicle orientation, as provided by input 106, to calculate a graphic indication, i.e., a display vector orientation,

indicating direction of travel for a geographic point of interest 14 relative to the current vehicle position. To portray on display 100 the relative direction, i.e., toward the geographic point of interest, current vehicle orientation is considered. Thus, calculation and display of a vector on display 100 begins with calculation of distance between two points designated by longitude and latitude values, i.e., distance between the current vehicle location and the geographic point of interest 14, and calculation of an angle of orientation for a direction of travel. In other words, display 100 has a fixed relationship relative to vehicle 10 and vehicle orientation input 106 supports an accurate display of a direction of travel as presented by vector icon on display 100. Furthermore, the display presented may be updated as vehicle 10 moves and the distance between vehicle 10 and the geographic point of interest 14 changes and also as vehicle orientation changes.

FIG. 3 illustrates a front view of the travel information device 40 monitoring the combined voice and data broadcasts 22 and 26 and global positioning system broadcast 52. FIG. 3 also illustrates display 100 and input controls 102. Input controls 102 include a tune dial 102a, a volume dial 102b and an AM/FM switch 102c. As may be appreciated, device 40 operates, from a user perspective, in part as a conventional car radio. The user manipulates input controls 102a-102c to listen to a voice broadcast 22 on speakers 70. Additional control

inputs 102 for device 40 include a clock button 102d, a tuner button 102e, a where information button 102f, a stored information button 102g, a filter button 102h, and a here button 102i. Use of input controls 102d-102i will be explained more fully hereafter, but generally provide to the user various display presentations relative to display 100 and modes of operation for device 40.

As illustrated in FIG. 3, display 100 presents a text message display portion 100a showing information such as vendor name, address, and current marketing information, for example, a sale or promotional activity including a date of availability for the promotional activity. Display portion 100a further presents a category of vendor, e.g., sporting goods. As may be appreciated, the data records obtained from data broadcast 26 and stored in device 40 include a variety of fields as indicated generally by the display portion 100a in FIG. 3. In such form, information maintained in device 40 may be manipulated in the manner of a database, e.g., searching, sorting, and other such database record management functions.

Display 100 further provides a vector angle portion 100b and a vector distance-to-travel portion 100c. As described herein above, angle portion 100b indicates the relative orientation of a direction of travel from the current vehicle location to a selected geographic point of interest 14. Distance-to-travel

portion 100c represents the distance separating the current vehicle location and the geographic point of interest. The angular orientation of portion 100b desirable takes into account the current vehicle 10 orientation input 106 as provided by compass 104. Presentation of vector angle portion 100b should, therefore, indicate generally a direction of travel considering the viewer's perspective, i.e., looking at display 100 from within vehicle 10, to indicate appropriately the relative orientation of a direct line-of-sight or direction-of-travel from the current vehicle position to the geographic point of interest 14.

Clock button 102d, when pressed, causes presentation by microprocessor 60 on display 100 the current time of day. Tuner button 102e, when pressed, causes presentation on display 100 by microprocessor 60 information relevant to tuning voice broadcast radio 64, e.g., frequency of station currently tuned, preset features available, and any other information normally displayed in connection with operation of a voice broadcast radio.

Where information button 102f, when pressed, indicates to microprocessor 60 operator desire to collect information from data broadcast 26. For example, voice broadcast 22 and data broadcast 26 are synchronized broadcasts and the operator of device 40 hears an advertisement of interest provided by way of voice broadcast 22 and presses the where information button 102f

for further information. Microprocessor 60 then collects a data record, i.e., text message information relative to the advertisement of interest, by way of data broadcast 26 and data receiver 62. Text message information presented in display portion 100a is obtained, therefore, by the operator activating the where information button 102f during or just after a voice broadcast advertisement of interest.

Device 40 holds multiple data records, i.e., one for each geographic point of interest 14. Stored information button 102g allows scanning through such stored data records and selective display of the previously stored data record for a geographic point of interest 14. In this manner, the user of device 40 constructs a personal electronic reference tracking travel information including data records for particular geographic points of interest 14, i.e., data records selected by and of interest to a particular user. The user thereby builds a personalized and current database of geographic points of interest 14.

Filter button 102h drives device 40 into an automatic data collection mode according to user selected filter criteria. For example, device 40 monitors the stream of data provided in data broadcast 22 and compares location information therein to the current vehicle location to collect all references within a given distance of current vehicle location. Additionally, the user

establishes a category of interest, e.g., auto parts advertisements, grocery store advertisements, sporting goods or restaurant advertisements, to further filter information available in data broadcast 22. In this manner, the user of device 40 creates automatically a customized database by designating geographic points of interest 14 according to user-selected criteria.

The here button 102i provides another method of creating a data record concerning a geographic point of interest 14 within device 40, in this case one corresponding to current vehicle location. The operator presses here button 102i and creates a geographic point of interest 14 data record corresponding to current vehicle location. This allows the user to begin at a given location, operate here button 102i, and have ability to reference that given location later while travelling, e.g., to return to that given location or to have directional indication of that given location from another vehicle location. The data record created by device 40 in response to the here button 102i includes at least the longitude and latitude information corresponding to the vehicle position at the time of button 102i activation. Additional textual information can be entered by the user if desired, e.g., textual information entered by operation of control inputs 102 in response to supporting prompts presented on display 100. For example, the user may wish to name a location in conjunction with activating the here button 102i for

meaningful later reference thereto.

FIG. 4 illustrates programming of microprocessor 60 for information collection from data broadcast 26, i.e., in this case in response to activation of where information button 102f. In FIG. 4, it will be assumed that voice broadcast 22 and data broadcast 26 are associated by simultaneous broadcast. As may be appreciated, other association methods may be employed and incorporated into the illustrated embodiment of the present invention. Processing in response to user activation of the where information button 102f begins in block 140 where microprocessor 60 collects the most recently received data record of data broadcast 26. As shown in the present embodiment, voice broadcast 22 and data broadcast 26 are associated by simultaneous presentation and microprocessor 60 need only collect in response to activation of the where information button 102f the current presented or most recently presented data record in data broadcast 26. In anticipation of such task, microprocessor 60 always collects in an input buffer (not shown) each data record presented in data broadcast 26. For each new data record presented, the old, previous data record is replaced in the input buffer. Thus, when the operator activates where information button 102f, the input buffer holds, or will soon hold, a complete data record taken from data broadcast 26 and associated with the current voice broadcast 22 presentation. Thus, processing in block 140 implements a method of association

between voice broadcast 22 and data broadcast 26.

Decision block 142 determines whether the current voice broadcast 22 is related to the most recently received data record. For example, not every voice broadcast 22 presentation, e.g., advertisement, will have an associated data record available in data broadcast 26. For example, if the data record most recently received by way of data broadcast 26 is "stale" then it should not be taken as related to the current voice broadcast 22 presentation. In such case, processing branches through block 144 where device 40 presents on display 100 the message "where information not available" and processing terminates. If, however, the data record most recently received is related to the voice broadcast 22 presentation, i.e., not "stale", then processing advances to block 146 where microprocessor 60 obtains the current vehicle location and vehicle orientation. As may be appreciated, determining whether a given data record is "stale" may be implemented by time-stamping data records held in the input buffer. The length of time required to become "stale" in the input buffer is variable and a function of how quickly the operator of vehicle 10 must activate the where information button 102f.

Microprocessor 60 then calculates in block 148 the angle portion 100b and distance-to-travel portion 100c. In other words, microprocessor 60 calculates and angle of orientation for

the arrow icon presented in portion 100b using the current vehicle orientation 106 and the direction of travel toward the subject geographic point of interest 14. Microprocessor 60 then calculates the distance-to-travel value for portion 100c as the separation between the current vehicle position and subject geographic point of interest 14.

As may be appreciated, a timer interrupt may also be set to itteratively execute procedures updating the display portions 100b and 100c as the vehicle changes orientation and location relative to the geographic point of interest 14 associated with the current data record. Furthermore, microprocessor 60 may take into account fuel remaining input 92 in comparison to expected vehicle 10 mileage and consider separation between current vehicle position and the subject geographic point of interest 14. If vehicle 10 holds insufficient fuel to make the trip to the subject geographic point of interest, an appropriate display may be presented to indicate such condition to the vehicle operator.

Continuing to block 150, microprocessor 60 presents in display portion 100a the text message portion of the current data record, e.g., vendor name, address, phone number, and any other special promotional information provided. In decision block 152, the operator has opportunity to keep for permanent storage the current data record, in which case processing branches through block 154 where the current data record is stored for later

reference, i.e., by operation of the stored information button 102g. Otherwise, processing exits directly from decision block 152.

FIG. 5 illustrates by flow chart an alternative method for gathering information from the data broadcast 22, i.e., gathering information automatically according to user-designated criteria in response to filter button 102h. In this manner, the operator need not monitor voice broadcast 22 to collect information of potential interest by way of data broadcast 26.

In FIG. 5, processing begins in block 180 where microprocessor 60 obtains, from the user, appropriate filtering criteria. For example, user interaction is conducted by way of display 100 and alternate functions defined for control inputs 102 to collect from the user a designation of filter criteria. For example, the user may be interested in all data records broadcast and being associated with a location within a given distance of current vehicle location. In this manner, the user collects advertising information for vendors in close and convenient proximity to current vehicle location. Also, data records are classified according to category, and the user designates as qualifying under user criteria certain categories of information. For example, the user may be interested in certain types of products or services advertised and having associated data records in data broadcast 22. In any event,

block 180 represents user designation of criteria applied to data records appearing in data broadcast 22, i.e., which of those data records will be accepted and stored by device 40 for later reference by operation of the stored information button 102g.

Continuing to block 182, microprocessor 60 gets the next data record provided in data broadcast 22 and, in decision block 184, applies the user-designated criteria. If the data record collected in block 182 meets the user-designated criteria provided in block 180, then processing advances to block 186. Otherwise, processing returns to block 182 from decision block 184 to collect the next data record appearing in data broadcast 26. In block 186, microprocessor 60 obtains the current vehicle position and orientation. Continuing to block 188, microprocessor 60 calculates and displays the arrow icon at appropriate angle of orientation and the distance-to-travel value in display portions 100b and 100c, respectively.

Then, in block 190, microprocessor 60 displays the text message data available in the collected data record. An alarm presented in block 190 indicates to the user collection of a data record potentially of interest, i.e., satisfying the user-designated criteria provided in block 180. Decision block 192 allows the user opportunity to discard or keep for permanent storage the data record just collected. Accordingly, if the user declines storage of the just-collected data record then

processing returns immediately to block 182. Otherwise, processing advances through block 194 where the just-collected data record is stored for later reference by operation of the stored information button 102g. Processing then returns from block 194 to block 182 for collection of a next data record.

As may be appreciated, an exit procedure (not shown) interrupts the data record collection loop represented by flow chart in FIG. 5. For example, the user may wish to terminate collection or may wish to modify the designation of data record collection criteria in block 180. Furthermore, processing at decision block 192 need not forego collection of additional data records in data broadcast 26. In other words, additional records may be queued for review by the operator even though microprocessor 60 is awaiting input at decision block 192. Also, should the operator not respond immediately at decision block 192, a time-out feature allows processing to advance without requiring user input, e.g., accepts for storage the data record qualifying under the user designated criteria and allows the user to later delete the record from device 40.

FIG. 6 illustrates by flow chart processing conducted by the radio broadcast system 20 in providing associated voice broadcast 22 and data broadcast 26. In FIG. 6, processing begins in block 200 where radio broadcast system 20 receives an advertising subscription including both voice advertising for presentation in

the voice broadcast 22 and message information for presentation in the data broadcast 26. As noted herein above, association between the voice advertisement and message data is by simultaneous broadcast. Thus, system 20 transmits in block 202 the text message information and location information in data broadcast 26 followed by transmission of the voice presentation in voice broadcast 22. As may be appreciated, processing in blocks 202 and 204 repeats intermittently, i.e., according to how often and when the dual channel advertisement is to be broadcast.

FIG. 7 illustrates programming for microprocessor 60 in response to activation of the stored information button 102g. In FIG. 7, processing begins in block 220 where microprocessor 60 presents opportunity for the user to scan stored data records according to a given criteria, i.e., get a display selection from the user of device 40. For example, the user wishes to display data records according to a certain sequence or to display only records meeting a certain criteria, e.g., restaurant advertisements. Having obtained a display selection from the user, processing advances to block 224 where microprocessor 60 gets a next data record according to the user-designated display selection. Continuing to block 226, microprocessor 60 obtains the current vehicle position and orientation. Then, in block 228, microprocessor 60 calculates and presents display portions 100b and 100c, i.e., displays vector information indicating the distance and relative orientation to a geographic point of

interest 14 corresponding to the data record currently presented. Continuing to block 230, microprocessor 60 displays at display portion 100a the text portion of the data record for review by the user. Decision block 232 provides the user opportunity to terminate scanning of stored information in which case processing exits from decision block 232. If the user continues scanning through the scored data records according to the designated display selection, then processing returns from decision block 232 to block 224 where a next data record in the sequence is selected for review by the user.

Important to note, as the user scans through stored data records and obtains a presentation on display 100, the then-current vehicle orientation and location are referenced to present a then-current relative position in display portions 100b and 100c, i.e., the current relative direction of travel and distance to the geographic point of interest 14 associated with the data record currently displayed by device 40. Also, processing illustrated in FIG. 7 initiates a timer interrupt procedure updating display portions 100b and 100c as the vehicle orientation and location relative to the currently displayed geographic point of interest 14 changes.

The scanning procedure illustrated in FIG. 7 may, as will be appreciated, be augmented to include additional features such as deleting data records, sorting on various fields of the text

message portion, and applying additional category values whereby the user may better manage a collection of information maintained in device 40 and relevant to travel of vehicle 10 to and from geographic points of interest 14.

Thus, an improved vehicle information device and method of operation have been shown and described. Under the present invention, a user builds a customized database containing geographic points of interest, including precise longitude and latitude information and ability to provide distance and orientation of travel toward the geographic point of interest and in relation to the current vehicle location. In this manner, the user obtains useful information by way of radio signal without requiring reference to a massive digital database of the surrounding geographic area. Information obtained by radio signal is always current, i.e., replaced by subsequent broadcast. In this manner, the operator maintains a dynamic and up-to-date database of specific geographic points of interest.

It will be appreciated, that the present invention is not restricted to the particular embodiment or embodiments that have been described and illustrated herein, and that variations may be made therein without departing from the scope of the invention as found in the appended claims and equivalents thereof.

Claims

What is claimed is:

1. A method for providing travel information relative to vehicle location, the method comprising the steps:

transmitting information of potential interest, said information of potential interest including records, each record including at least a location corresponding to a geographic point;

receiving at travel information devices said information of potential interest;

determining at each travel information device a current location therefor; and

selecting at each travel information device ones of said records for display, said display including indication of direction and distance to the corresponding geographic point in relation to said current location for said travel information device.

2. A method according to claim 1 wherein said transmitting step includes, in said information of potential interest, also text message data.

3. A method according to claim 2 wherein said text message

data comprises advertising data for a vendor at the corresponding geographic location.

4. A method according to claim 1 wherein said method further comprises the step of carrying said travel information device in a vehicle.

5. A method according to claim 1 wherein said step of transmitting includes transmitting voice information by voice broadcast and text data information by data broadcast, said records being provided in said data broadcast, said voice broadcast and data broadcast being associated whereby presentation of said voice broadcast corresponds to a given portion of said data broadcast.

6. A method according to claim 1 wherein said step of transmitting information comprises the step of transmitting advertising information and said geographic point corresponds to a vendor location associated with said advertising.

7. A method of operating a travel information device carried by a vehicle along a travel route, the method comprising the steps:

receiving data records by radio signal, each data record corresponding to a potential point of interest along a travel route and including at least a geographic location for said

potential point of interest;

selecting and storing ones of said data records;

calculating current location for said travel information device; and

displaying position relative to said current location of a geographic location corresponding to a selected data record.

8. A method according to claim 7 wherein said data records correspond to advertising information of a vendor at said geographic location.

9. A method according to claim 7 wherein said method further comprises advertising broadcast by voice signal and associated with at least one of said data records.

10. A method according to claim 7 wherein said displaying position step comprises the step of displaying relative orientation of a direction and magnitude of distance from said current location to said geographic location.

11. A method of providing travel information at a vehicle, the method comprising the steps:

detecting said vehicle position;

collecting information relevant to geographic points of interest, said information including a geographic location for each of said geographic points of interest; and

displaying relative to a current location as established in said detecting step a distance to and a direction toward a selected one of said geographic points of interest.

12. A method according to claim 11 wherein said method further comprises the steps:

maintaining a plurality of data records, each corresponding to information taken from said collecting step and relevant to a geographic point of interest; and

reviewing said plurality of data records while concurrently executing said display step relative to a data record currently under review taking into account a then-current vehicle location.

13. A method according to claim 11 wherein said collecting step comprises the steps:

monitoring by an operator of the travel information device a voice broadcast; and

actuating by an operator said travel information device to capture information in an associated data broadcast.

14. A method according to claim 11 wherein said step of detecting said vehicle position is by satellite transmission.

08/585,604

DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

Abstract of the Disclosure

A vehicle information device and collects information concerning specific geographic points of interest. The operator recalls for display such information, including a display showing direction and distance of travel to a designated geographic point of interest relative to a then-current vehicle location. Dual channel advertising is transmitted by voice broadcast and by data broadcast. Upon hearing in the voice broadcast an advertisement of interest, the operator captures the associated data broadcast including, among other detailed text message information, the location of the advertiser. Distance and relative direction of travel from the current vehicle location to the geographic point of interest is thereby presented. Multiple geographic points of interest are stored for selective review whereby the user constructs a database containing locations of particular interest to a particular person.

POWER OF ATTORNEY

Commissioner of Patents and Trademarks
Washington, D. C. 20231
Sir:

Seiko Telecommunications Systems Inc. is the assignee of the patent application filed herewith and identified as.

Title: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION
Inventor: Michael C. Park
Docket: P126

Seiko Telecommunication Systems Inc. as assignee hereby appoints the following attorney to prosecute this application and to transact all business connected therewith in the U. S. Patent and Trademark Office.

Name	Reg. No.
Elmer W. Galbi	19,761
Keith Cushing	32,407

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Seiko Telecommunication Systems Inc.
9205 S.W. Gemini Drive, Bld 140
Beaverton, OR 97006

Direct telephone calls to: Elmer W. Galbi 503-531-1516

Date 6/27/94

Takehide Yamada
Vice President
Seiko Telecommunication Systems Inc.

28,593

DECLARATION BY INVENTOR

As the below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe that I am an original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention,

Entitled: **DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION**

Docket Number: **P-126**

the specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above identified specifications, including the claims.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations 1.56(a).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made, with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

CLAIM OF PRIORITY BASED ON FOREIGN APPLICATIONS: **NONE**

CLAIM OF PRIORITY BASED ON PREVIOUSLY FILED U.S. APPLICATIONS: **NONE**

Michael C. Park	USA	Michael C Park	7/29/97
Inventor name	Citizenship	Signature	Date

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Portland, Oregon 97225
Post Office Address and Residence

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585604

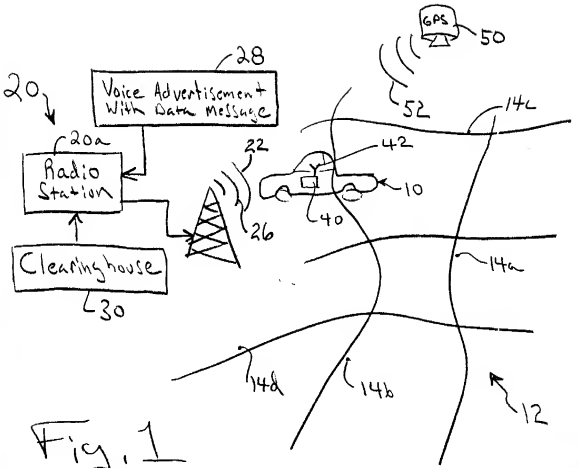

Fig. 1

7 Figs

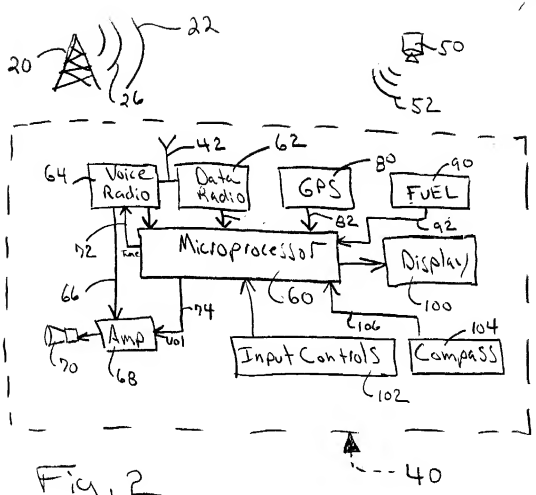

Fig. 2

08/282893
585/604

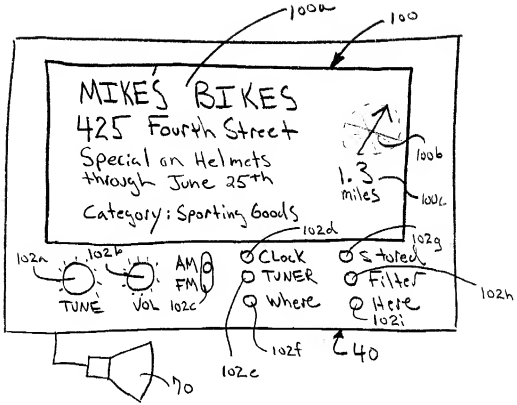

Fig. 3

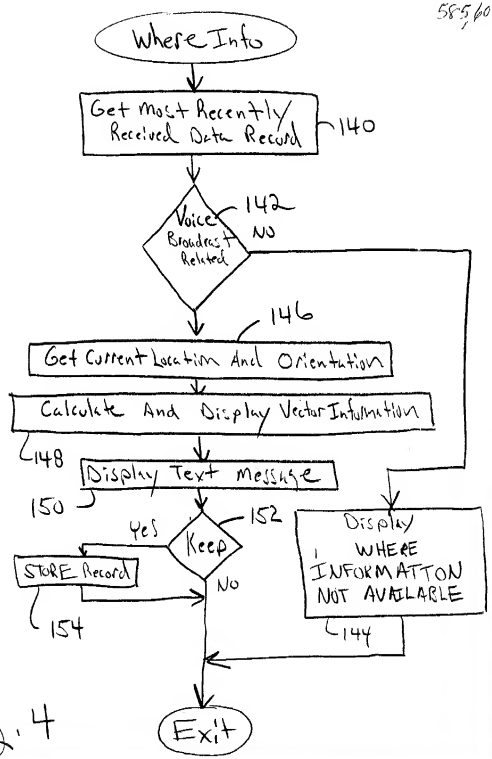
Where Info
Get most Recently Received Data Record
140
Voice Broadcast Related
142
NO
146
Get Current Location And Orientation
Calculate And Display Vector Information
148
Display Text message
150
Keep
152
Yes
STORE Record
154
No
Display WHERE INFORMATION NOT AVAILABLE
144
Exit

Fig. 4

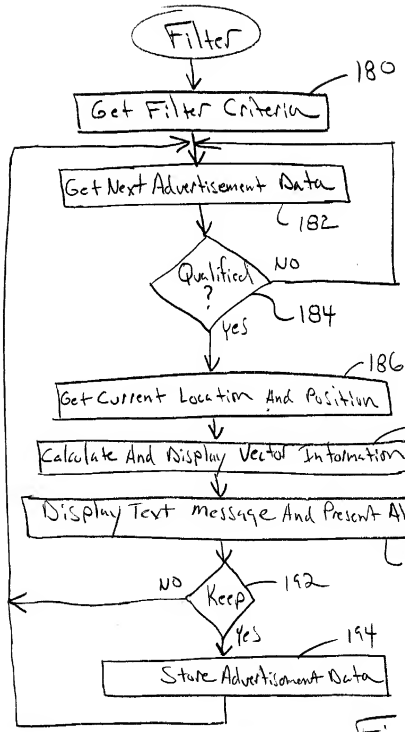
Filter
Get Filter Criteria
180
Get Next Advertisement Data
182
Qualified ?
NO
184
yes
Get Current Location And Position
186
Calculate And Display Vector Information
188
Display Text message And Present Alarm
190
NO
Keep
192
Yes
Store Advertisement Data
194

Fig. 5

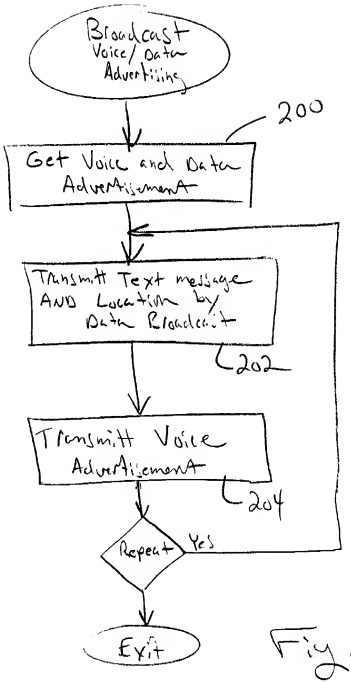

Fig. 6

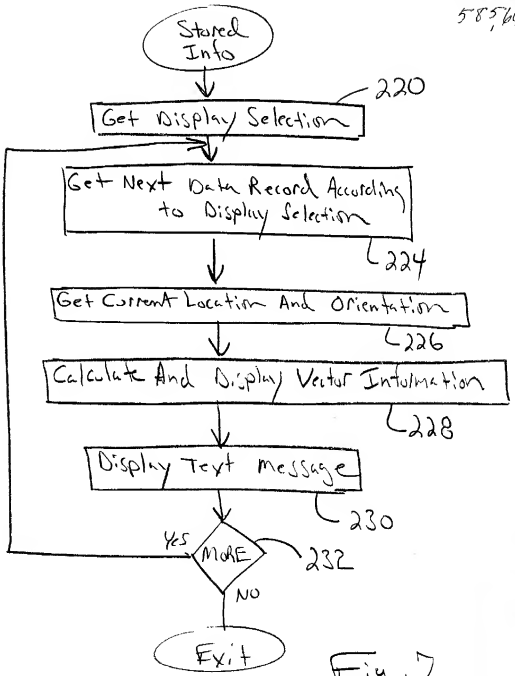
Stored Info
Get Display Selection
220
Get Next Data Record According to Display Selection
224
Get Current Location And Orientation
226
Calculate And Display Vector Information
228
Display Text message
230
MORE
232
Yes
NO
Exit

Fig. 7

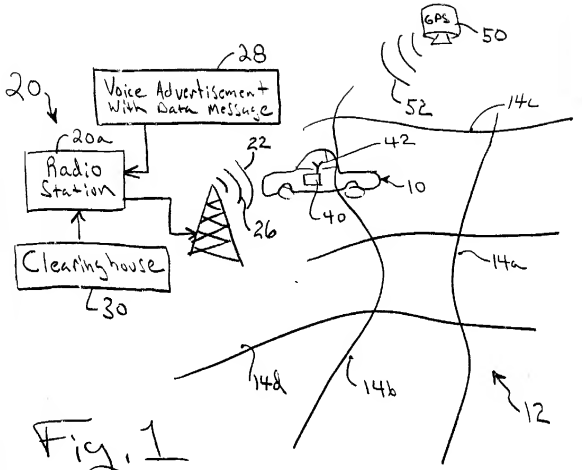

Fig. 1

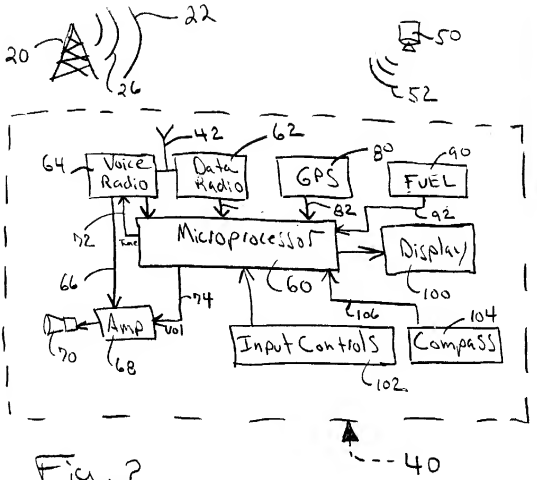

Fig. 2

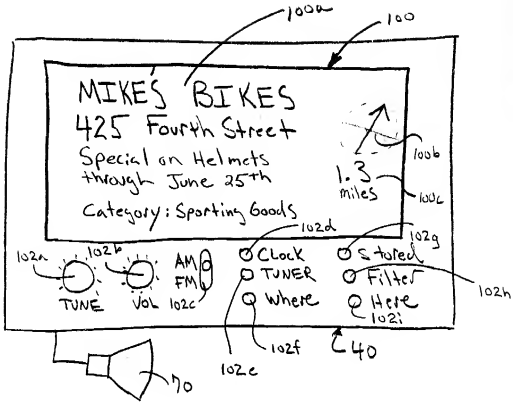

Fig. 3

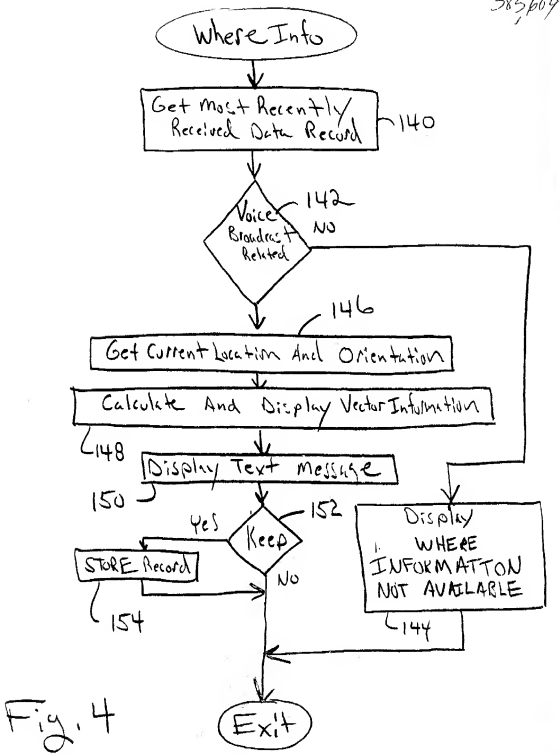
Where Info
Get most Recently Received Data Record
140
Voice Broadcast Related
142
NO
146
Get Current Location And Orientation
Calculate And Display Vector Information
148
Display Text message
150
Keep
152
Yes
STORE Record
154
NO
Display WHERE INFORMATION NOT AVAILABLE
144
Exit

Fig. 4

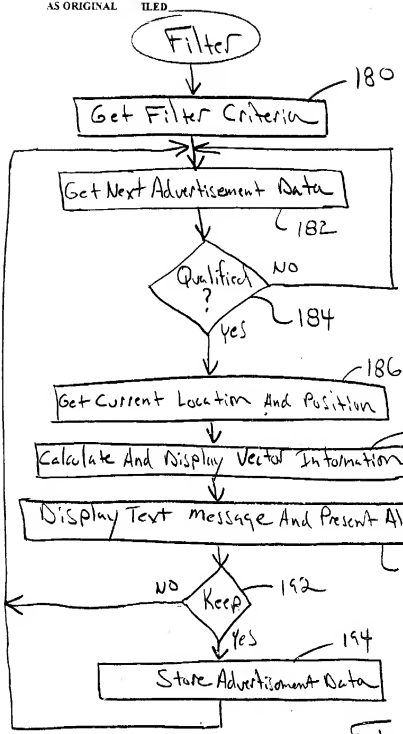

Fig. 5

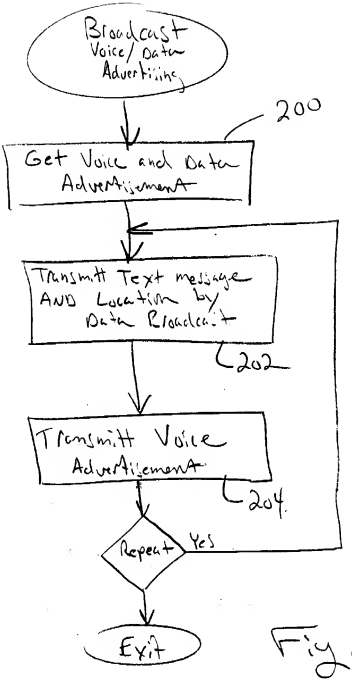

Fig. 6

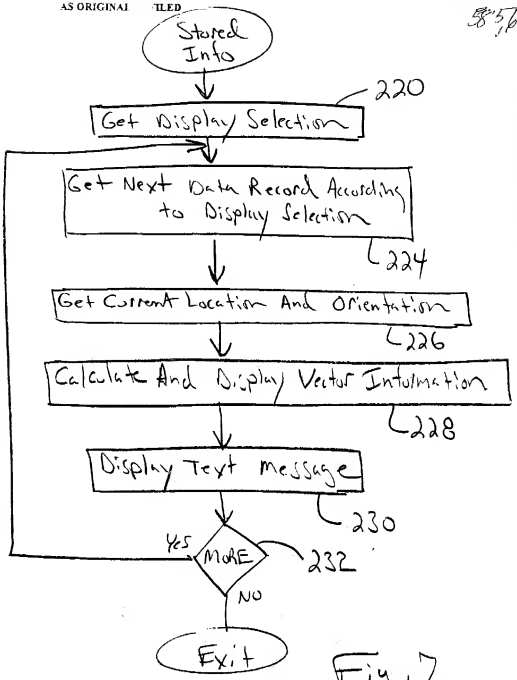

Fig. 7

08/282893

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PORTLAND, OREGON 97219
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July 29, 1994

Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Dear Sir:

Enclosed herewith for filing by Express Mail is an application for U. S. Letters Patent, including:

26 pages Specification
1 pages Abstract
14 Claims
7 sheets of Drawings
Declaration
Filing Fee Check ($710.00)
Postcard
Power of Attorney
Assignment
Check in the amount of $40.00
Assignment Cover Sheet
For: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION
P-126
Inventor: Michael C. Park

This application is being filed by Express Mail and a filing date of July 29, 1994 is requested.

Respectfully submitted,

Keith A. Cushing
Attorney for Applicant
Reg. No. 32,407

CERTIFICATE OF MAILING - EXPRESS MAIL

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U. S. Postal Service as Express Mail No. **EF310161589 US**, in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. on the date indicated below.

Date 7/29/94

Keith A. Cushing
Attorney of Record
Reg. No. 32,407

09/220

I hereby certify that on 9/26 1994 this document is being deposited with the United States Postal Service as FIRST CLASS MAIL addressed to The Commissioner of Patents and Trademarks, Washington, DC 20231

by: Elmer Galbi Reg. No 19,761

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application:
Inventor: Michael C. Park

Art Unit: 2202
Examiner:

Serial No.: 08/282,893

Filed: 07/29/94

Title: Dual Channel Advertising Reference Vehicle Location

Docket: P126

Date of this paper: September 26, 1994

Change of Address Notice #2 F.W. 10-4-94

Commissioner of Patents and Trademarks
Washington, D. C. 20231

Sir:

Please note that the address of applicant's attorney has been changed.

All future correspondence should be addressed to:

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Respectfully submitted,

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UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

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Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/282,893	07/29/94	PARK	M P126

EXAMINER
~~BLUM, T~~

22M2/0321

ELMER W GALBI
SEIKO TELECOMMUNICATION SYSTEMS INC
1625 N.W. AMBER GLEN COURT,
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BEAVERTON OR 97006

ART UNIT	PAPER NUMBER
2202	3

DATE MAILED: 03/21/95

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☑ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), _____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☑ Notice of References Cited by Examiner, PTO-892.
2. ☑ Notice re Patent Drawing, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, Form PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____

Part II SUMMARY OF ACTION

1. ☑ Claims 1-14 are pending in the application.
   Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☑ Claims 1-14 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received
    ☐ been filed in parent application, serial no. _____; filed on _____
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-14 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kashiwazaki.

Kashiwazaki teaches the claimed method for providing travel information relative to vehicle location including: transmitting information of potential interest (received by 29), determining the current location of the vehicle 20, and displaying the direction and distance from the current vehicle location to the geographic point (Figure 8).

3.The Takanabe et al and Noreen et al patent are cited to show vehicle location systems which include a GPS receiver. Note Figures 3 and 6, and column 4, line 28 of Takanabe et al and columns 10 and 14 of Noreen et al.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theodore Blum whose telephone number is (703) 308-0481.

March 16, 1995

Theodore M. Blum
THEODORE M. BLUM
EXAMINER
GROUP ART UNIT 222

TO SEPARATE, HOLD TOP AND BOTTOM EDGES, SNAP APART AND REMOVE CARBON

FORM PTO-892 (REV. 2-92) — U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

SERIAL NO. 08/280,893 | GROUP ART UNIT 2202 | ATTACHMENT TO PAPER NUMBER 3

APPLICANT(S) PARK

NOTICE OF REFERENCES CITED

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	A	5,365,449	11-94	KASHIWAZAKI	364	449	9-92
	B	5,303,393	4-94	NOREEN ET AL	455	12.1	
	C	5,359,527	10-94	TAKANABE ET AL	364	449	10-92
	D						
	E						
	F						
	G						
	H						
	I						
	J						
	K						

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS DWG	PERTINENT PP. SPEC.
	L								
	M								
	N								
	O								
	P								
	Q								

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

R	
S	
T	
U	

EXAMINER T. BLUM | DATE 3-16-95

* A copy of this reference is not being furnished with this office action.
(See Manual of Patent Examining Procedure, section 707 05 (a).)

Form PTO 948 (Rev. 10-93) U.S. DEPARTMENT OF COMMERCE - Patent and Trademark Office Application No. 08/282,893

NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

PTO Draftspersons review all originally filed drawings regardless of whether they are designated as formal or informal. Additionally, patent Examiners will review the drawings for compliance with the regulations. Direct telephone inquiries concerning this review to the Drawing Review Branch, 703-305-8404.

The drawings filed (insert date) 7/29/94, are
A. ___ not objected to by the Draftsperson under 37 CFR 1.84 or 1.152.
B. ___ objected to by the Draftsperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawings must be submitted according to the instructions on the back of this Notice.

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings:
Black ink. Color.
___ Not black solid lines. Fig(s)_____
___ Color drawings are not acceptable until petition is granted.

2. PHOTOGRAPHS. 37 CFR 1.84(b)
___ Photographs are not acceptable until petition is granted.

3. GRAPHIC FORMS. 37 CFR 1.84 (d)
___ Chemical or mathematical formula not labeled as separate figure. Fig(s)_____
___ Group of waveforms not presented as a single figure, using common vertical axis with time extending along horizontal axis. Fig(s)_____
___ Individuals waveform not identified with a separate letter designation adjacent to the vertical axis. Fig(s)_____

4. TYPE OF PAPER. 37 CFR 1.84(e)
___ Paper not flexible, strong, white, smooth, nonshiny, and durable. Sheet(s)_____
___ Erasures, alterations, overwritings, interlineations, cracks, creases, and folds not allowed. Sheet(s)_____

5. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable paper sizes:
21.6 cm. by 35.6 cm. (8 1/2 by 14 inches)
21.6 cm. by 33.1 cm. (8 1/2 by 13 inches)
21.6 cm. by 27.9 cm. (8 1/2 by 11 inches)
21.0 cm. by 29.7 cm. (DIN size A4)
___ All drawing sheets not the same size. Sheet(s)_____
___ Drawing sheet not an acceptable size. Sheet(s)_____

6. MARGINS. 37 CFR 1.84(g): Acceptable margins:

Paper size			
21.6 cm. X 35.6 cm. (8 1/2 X 14 inches)	21.6 cm. X 33.1 cm. (8 1/2 X 13 inches)	21 cm. X 29.7 cm. (DIN size A4)	
21.6 cm. X 27.9 cm. (8 1/2 X 11 inches)			
T .5 cm. (2")	1.5 cm. (1")	2.5 cm. (1")	2.5 cm.
L .64 cm. (1/4")	.64 cm. (1/4")	64 cm. (1/4")	2.5 cm.
R .64 cm. (1/4")	.64 cm. (1/4")	64 cm. (1/4")	1.5 cm.
B .64 cm. (1/4")	.64 cm. (1/4")	.64 cm. (1/4")	1.0 cm

Margins do not conform to chart above.
Top (T) 1.5 cm Left (L) Right (R) Bottom (B)

7. VIEWS. 37 CFR 1.84(h)
REMINDER: Specification may require revision to correspond to drawing changes.
___ All views not grouped together. Fig(s)_____
___ Views connected by projection lines. Fig(s)_____
___ Views contain center lines. Fig(s)_____

Partial views. 37 CFR 1.84(h)(2)
___ Separate sheets not linked edge to edge. Fig(s)_____
___ View and enlarged view not labeled separately. Fig(s)_____
___ Long view relationship between different parts not clear and unambiguous. 37 CFR 1.84(h)(2)(ii) Fig(s)_____

Sectional views. 37 CFR 1.84(h)(3)
___ Hatching not indicated for sectional portions of an object. Fig(s)_____
___ Hatching of regularly spaced oblique parallel lines not spaced sufficiently. Fig(s)_____
___ Hatching not at substantial angle to surrounding axes or principal lines. Fig(s)_____
___ Cross section not drawn same as view with parts in cross section with regularly spaced parallel oblique strokes. Fig(s)_____
___ Hatching of juxtaposed different elements not angled in a different way. Fig(s)_____

Alternate position. 37 CFR 1.84(h)(4)
___ A separate view required for a moved position. Fig(s)_____

Modified forms. 37 CFR 1.84(h)(5)
___ Modified forms of construction must be shown in separate views. Fig(s)_____

8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)
___ Wise placed upon another view or within outline of another. Fig(s)_____
___ Words do not appear in a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s)_____

9. SCALE. 37 CFR 1.84(k)
___ Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction. Fig(s)_____
___ Indication such as "actual size" or "scale 1/2" not permitted. Fig(s)_____
___ Elements of same view not in proportion to each other. Fig(s)_____

10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l)
✓ Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (except for color drawings). Fig(s)_____

11. SHADING. 37 CFR 1.84(m)
___ Shading used for other than shape of spherical, cylindrical, and conical elements of an object, or for flat parts. Fig(s)_____
___ Solid black shading areas not permitted. Fig(s)_____

12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p)
✓ Numbers and reference characters not plain and legible. 37 CFR 1.84(p)(1) Fig(s)_____
___ Numbers and reference characters used in conjunction with brackets, inverted commas, or enclosed within outlines. 37 CFR 1.84(p)(3) Fig(s)_____
___ English alphabet not used. 37 CFR 1.84(p)(2) Fig(s)_____
✓ Numbers, letters, and reference characters do not measure at least 32 cm. (1/8 inch) in height. 37 CFR(p)(3) Fig(s)_____

13. LEAD LINES. 37 CFR 1.84(q)
___ Lead lines cross each other. Fig(s)_____
___ Lead lines missing. Fig(s)_____
___ Lead lines not as short as possible. Fig(s)_____

14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(t)
___ Number appears in top margin. Fig(s)_____
___ Number not larger than reference characters. Fig(s)_____
___ Sheets not numbered consecutively, and in Arabic numerals, beginning with number 1. Sheet(s)_____

15. NUMBER OF VIEWS. 37 CFR 1.84(u)
___ Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s)_____
___ View numbers not preceded by the abbreviation Fig. Fig(s)_____
___ Single view contains a view number and the abbreviation Fig.
___ Numbers not larger than reference characters. Fig(s)_____

16. CORRECTIONS. 37 CFR 1.84(w)
___ Corrections not durable and permanent. Fig(s)_____

17. DESIGN DRAWING. 37 CFR 1.152
___ Surface shading shown not appropriate. Fig(s)_____
___ Solid black shading not used for color contrast. Fig(s)_____

ATTACHMENT TO PAPER NO._____ REVIEWER Laura DATE 9/19/94

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/282893	7-29-94	PARK	P126

EXAMINER	
T. BLUM	
ART UNIT	PAPER NUMBER
2202	4

DATE MAILED:

EXAMINER INTERVIEW SUMMARY RECORD

All participants (applicant, applicant's representative, PTO personnel):

(1) MR. GALBI (3) _____

(2) MR. BLUM (4) _____

Date of Interview 7-6-95

Type: ☐ Telephonic ☒ Personal (copy is given to ☐ applicant ☒ applicant's representative).

Exhibit shown or demonstration conducted: ☐ Yes ☒ No. If yes, brief description: _____

Agreement ☐ was reached with respect to some or all of the claims in question. ☒ was not reached.

Claims discussed: 1, 7, 11

Identification of prior art discussed: all

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: The last office action was discussed.

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

Unless the paragraphs below have been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW (e.g., items 1 - 7 on the reverse side of this form). If a response to the last Office action has already been filed, then applicant is given one month from this interview date to provide a statement of the substance of the interview.

☐ It is not necessary for applicant to provide a separate record of the substance of the interview.

☐ Since the examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action.

Theodore M. Blum
Examiner's Signature

PTOL-413 (REV. 1-84)

ORIGINAL FOR INSERTION IN RIGHT HAND FLAP OF FILE WRAPPER

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:	
Serial Number: 08/282,893	**Art Group**: 2202
Filing Date: 07/29/79	**Examiner**: BLUM, T
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Referencing Vehicle Location	

Date of this paper: June 15, 1995

Amendment

Responsive to Office Action Dated 03/21/95

Commissioner of Patents and Trademarks
Box: Non-Fee Amendment
Washington, D.C. 20231

Dear Sir:

Please amend the claims in the subject application as follows:

Cancel claims 2-6 and 8-10 and 12-14.

Amend claims 1, 7 and 14 as follows:

(see next page)

1. (amended) A method for providing travel information relative to vehicle location, the method comprising the steps:

transmitting information of potential interest, said information of potential interest including records, each record including at least a location corresponding to a geographic point;

receiving at travel information devices said information of potential interest;

determining at each travel information device a current location therefor; and

means for selecting at each travel information device ones of said records for display, said selection being based on the location of said vehicle said display including indication of direction and distance to the corresponding geographic point in relation to said current location for said travel information device.

7. (amended) A method of operating a travel information device carried by a vehicle along a travel route, the method comprising the steps:

receiving data records by radio signal, each data record corresponding to a potential point of interest along a travel route and including at least a geographic location for said potential point of interest;

[selecting and] storing [nes of]said data records;

selecting for display records depending upon the location of said vehicle;

calculating current location for said travel information device; and

displaying position relative to said current location of a geographic location corresponding to a selected data record.

11 (amended) . A method of providing travel information at a vehicle, the method comprising the steps:

detecting said vehicle position;

collecting [information] records relevant to geographic points of interest, said information including a geographic location for each of said geographic points of interest;

selecting for display records based upon the relative location of said vehicle and the location of the geographic point in the selected record; and

displaying relative to a current location as established in said detecting step a distance to and a distance toward a selected one of said geographic points of interest.

REMARKS:

This amendment is responsive to the Office Action dated 03/21/21. Claims 2-6 and 8-10 and 12-14 have been canceled in order to simplify the issues. The inventions previously covered by these claims are covered by remaining claims Claims 1, 7 and 11 which are the only claims which remain in this application. Reconsideration and allowance of claims 1, 7 and 11 as amended is requested for the following reasons:

The subject application was rejected under 35 U.S.C. § 102(b) based upon Kashiwazaki (Patent 5,365,449). Kashiwazaki shows a system which detects the present location of a vehicle, displays a map, and displays information related to a particular destination.

The embodiment shown in Figure 10 includes a receiver (29) which receives by radio a schedule "for sight-seeing a set of famous places in one district" (see column 7 lines 35 et seq of the reference).

In contrast to the above, the system shown and claimed in the present application receives by radio, advertisements concerning various business establishments. When the system detects that it is in the vicinity of one of these establishments, the information concerning that establishment is displayed. The key difference is that with the present invention there is no specification of a destination, route or schedule (as there is in the the system shown in the Kashiwazaki reference). With the present invention the records transmitted to the system are stored and as the vehicle goes past an establishment which has a corresponding record stored, the information concerning that establishment is automatically displayed. Thus, it is in the manner that records are selected for display that the present invention differs from the system shown in the Kashiwazaki reference. The applicant's claims have been amended to focus more clearly on applicant's technique for selecting records for display.

The examiner also cited the Takanabe and Noreen references; however, there was no rejection based on these references. These references merely show vehicle locating systems. The do not show the record display system shown and claimed by the applicant.

Since the references do not shown or suggest applicants invention, reconsideration of claims 1, 7 and 1 as amended is respectfully requested.

Rspectfully submitted,

Elmer Galbi Reg No 19,761
Seiko Communications Systems Inc.
1625 NW Amber Glen Court #140
Beaverton, OR 97006

Telephone: 503-531-1516

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address : COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/282,893	07/29/94	PARK	M P126

~~BLUM, T~~ EXAMINER

22M2/0718

ELMER W GALBI
SEIKO TELECOMMUNICATION SYSTEMS INC
1625 N.W. AMBER GLEN COURT,
SUITE 140
BEAVERTON OR 97006

ART UNIT	PAPER NUMBER
2202	6

DATE MAILED: 07/18/95

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☑ Responsive to communication filed on 6-19-95 ☑ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), ____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice re Patent Drawing, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, Form PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____

Part II SUMMARY OF ACTION

1. ☑ Claims 1, 7, 11 are pending in the application.

   Of the above, claims _____ are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☑ Claims 1, 7, 11 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).

12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received
    ☐ been filed in parent application, serial no. _____; filed on _____.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

PTOL-326 (Rev. 9-89)

1. Claim 1 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is a mixed method and apparatus claim. The method steps are "transmitting", "receiving", and "determining". The apparatus is "means for selecting".

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 7, and 11, are rejected under 35 U.S.C. § 102(b) as being anticipated by Kashiwazaki.

Kashiwazaki teaches the claimed method for providing travel information relative to vehicle location including:

determining the current location of the vehicle (GPS receiver 20),

transmitting information of potential interest (received by vehicle receiver 29 shown in Figure 10, see column 7, lines 65+) including records (Figure 2),

each record including at least a location corresponding to a geographic point (Figure 2),

selecting at each travel information device (vehicle) ones of said records (Figure 2) for display (Figure 8),

said selection being based on the location of said vehicle (column 8, lines 14-24).

4. Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theodore Blum whose telephone number is (703) 308-0481.

Theodore M. Blum

July 17, 1995

THEODORE M. BLUM
EXAMINER
GROUP ART UNIT 222

I hereby certify that on 7/27, 1995 this document is being deposited with the United States Postal Service as FIRST CLASS MAIL addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi

Elmer Galbi, Reg. No. 19,761,
Seiko Communications Systems Inc
1625 NW Amber Glen Court, #140
Beaverton, OR 97006 Telephone 503-531-1516

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:

Serial Number: **08/282,893**

Filing Date: **07/29/94**

Inventor(s) : **Michael C. Park**

Title: **Dual Channel Advertising Referencing Vehicle**

RECEIVED
AUG 2 5 1995
GROUP 2200

Art Group: **2202**

Examiner: **BECKLEY**

Docket: **P126**

Date of this paper: July 27, 1995

REQUEST FOR CERTIFIED COPY

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Please send a certified copy of the above application to:

Elmer Galbi
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, Suite 140
Beaverton, OR 97006

The undersigned is an attorney of record in the subject application.

Please charge the fee for the above to Deposit Account No. 19-1140 which is the account of Seiko Telecommunication Systems, Inc.

Respectfully submitted,

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

I hereby certify that on Nov 13, 1995 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: _____
Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 NW Amber Glen Court, Suite 140
Beaverton, OR 97006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:	
Serial Number: 08/282,893	**Art Group: 2202**
Filing Date: 07/29/94	**Examiner: Blum, T.**
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Reference Vehicle Location	**Docket: P126**

Date of this paper: November 13, 1995

Petition for an Extension of Time to Respond

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Applicant petitions for a one month extension of time to respond to the Office Action dated 07/18/95.

An appropriate response to the Office Action (i.e. a Notice of Appeal) is being filed herewith.

Please charge the fee for this petition ($110.00) and any other appropriate fees in this application to the undersigned's Deposit Account No. 19-1140.

Respectfully submitted,

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

06011656 11/13/95 08282893 19-1140 110 115 110.00CH

2202

I hereby certify that on Nov 13, 1995 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: _____
Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 NW Amber Glen Court, Suite 140
Beaverton, OR 97006

12-2-95

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:	
Serial Number: 08/282,893	**Art Group: 2202**
Filing Date: 07/29/94	**Examiner: Blum, T.**
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Reference Vehicle Location	**Docket: P126**

Date of this paper: November 13, 1995

NOTICE OF APPEAL

From the Examiner to the Board of Patent Appeals and Interferences.

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the decision dated 07/18/95 of the Examiner finally rejecting claims 1, 7 and 11 of the above identified application.

Please charge the fee for this Notice of Appeal (i.e. $290.00) and any additional applicable fees to the undersigned's **Deposit Account** No. 19-1140 which is in the name of Seiko Telecommunication Systems Inc.

Respectfully submitted,

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

06110:7 12/12/95 08282893
19-1140 110 119 290.00CH

08/585604

PATENT APPLICATION SERIAL NO.

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

P 30119 01/30/96 08585604 19-1140 030 101 750.00CH P126

PTO-1556
(5/87)

08/585,611 FWC.

EXPRESS MAIL LABEL NO. EG 221-069-713 US

Date of Deposit: January 10, 1996

I hereby certify that this is being deposited with the United States Postal Service "Express Mail, Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 NW Amber Glen Court, Suite 140
Beaverton, OR 97006

#10 Brief B
BS
3/24/96

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner of Patents and Trademarks
Box FWC
Washington, D. C. 20231

January 10, 1996

Dear Sir:

REQUEST FOR A FILE WRAPPER CONTINUATION APPLICATION under 37 CFR 1.62

This is a request for a file wrapper continuation application under the provisions of 37 CFR §1.62. The prior application is identified as follows:

Serial No.:	**08/282,893**
Filed:	**07/29/94**
Inventor:	**Michael C. Park**
Title:	**Dual Channel Advertising Referencing Vehicle Location**
Art Unit:	**2202, Examiner: Blum, T.**
Docket:	P126

The new application has the same inventor and the same title as the prior application. That is, the inventor and title of the new application are:

Inventor:	**Michael C. Park**
Title:	**Dual Channel Advertising Referencing Vehicle Location**

The applicant's docket number for this new application is P126-FWC.

Please use all the contents of the prior application file wrapper, including the drawings, as the basic papers for the new application. A preliminary amendment is being filed herewith.

Please direct correspondence to:

Elmer Galbi
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, Suite 140
Beaverton, OR 97006
Phone contact number: 503-531-1516

Please charge the $750.00 filing fee for this application to Deposit Account 19-1140 which is in the name of Seiko Telecommunications Corp.

Please note the following:

3) There is no claim to priority to any foreign application under 35 U.S.C. 119.

2) The prior application is assigned of record to Seiko Communications Holding N.V.

3) The power of attorney in the prior application is to:
Elmer Galbi, Reg No. 19761.

4) The specification of the application will be amended by inserting before the first line the sentence:
This application is a continuation of application Serial Number 08/282,893, filed 07/29/94 which is now abandoned.

5) No payment of the issue fee, abandonment of, or termination of proceedings has occurred in the above identified prior application.

6) The above identified prior application is hereby expressly abandoned as of the filing date of this file wrapper continuation application.

7) Secrecy under 35 USC 122 is hereby waived to the extent that if information or access is available to any application in the file wrapper of this 37 CFR 1.62 application, be it either this application or a prior application in the same file wrapper. The Patent and Trademark Office may provide similar information or access to all the other applications in the same file wrapper.

Respectfully submitted,

Elmer Galbi
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: 503-531-1516

08/585604

EXPRESS MAIL LABEL NO. EG 221-059-713 US

Date of Deposit: January 10, 1996

I hereby certify that this is being deposited with the United States Postal Service "Express Mail, Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 NW Amber Glen Court, Suite 140
Beaverton, OR 97006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:	
Serial Number: 08/282,893	Art Group: 2202
Filing Date: 07/29/94	Examiner: BLUM, T
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Referencing Vehicle Location	Docket: P126

Date of this paper: January 10, 1996

Notice of Abandonment

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

An FWC application has been filed on this date. The subject application is hereby abandoned.

Respectfully submitted,

Elmer W. Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, Oregon 97006
Direct calls to: (503) 531-1516

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

FROM: Sallye Rayford, Manager
Initial Review Division

SUBJECT: Receipt of Papers and Fees File Under 37 CFR 1.10 by Express Mail

The filing date of Jan 16, 1996 is the correct date. The date on the Express Mail Label under 37 CFR 1.10 is Jan 16, 1996 On that date the PTO was closed all day due to adverse weather conditions (authorized by the Office of Personnel Management) or a _____ normally scheduled Federal holiday within the District of Columbia. In accordance with 37 CFR 1.6 the papers have been stamped with the next succeeding day which is not a Saturday, Sunday or Federal holiday within the District of Columbia. The provision of 35 U.S.C. 21 (b) apply.

The papers were not stamped with the date on the certificate of mailing Express Mail Because the date on the certificate does not coincide with the date of deposit on the Express Mail label which the PTO takes evidence of when the package was mailed.

Date on certificate of mailing by Express Mail is _____

Date on Express Mail label is _____

Date of Receipt in PTO is _____

Therefore, the filing date is _____

The papers are not entitled to the benefits of 37 CFR 1.10 because:

_____

_____

Signed: D. Bell

Date: Jan 19, 1996

#11 Rec
3/29/96

EXPRESS MAIL LABEL NO. EG 221-069-713 US

Date of Deposit: January 10, 1996

I hereby certify that this is being deposited with the United States Postal Service "Express Mail, Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: _____

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 NW Amber Glen Court, Suite 140
Beaverton, OR 97006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PRIOR application:	
Serial Number: 08/282,893	Art Group: 2202
Filing Date: 07/29/94	Examiner: BLUM, T
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Referencing Vehicle Location	Docket: P126

Date of this paper: January 10, 1996

Preliminary Amendment Filed With FWC Application Responsive to the Office Action dated 07/18/95

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Please amend the above referenced application as follows:

In the Specification:

After the title and prior to the first line insert:

This application is a continuation of application Serial Number 08/282,893, filed 07/29/94 which is now abandoned.

In the claims:

Please cancel claims 1, 7, and 11.

Add claims 15, 16, and 17 as shown below.

15. A method for providing specific time and location sensitive advertising information to a moving vehicle, said specific time and location sensitive advertising information being selected from a large body of advertising information including a large number of records, each record including a specific time and location sensitive advertising information, the method comprising the steps:

transmitting to said vehicle by radio time said large body of advertising information,

receiving at said vehicle said large body of advertising information;

at a specific time, determining the location of said vehicle; and

selecting for display at said vehicle one of said records for display, said selection being at least in part based on the time of day and upon the location of said vehicle .

16. A method of providing time and location sensitive advertising information to the operator of a moving vehicle, the method comprising the steps:

receiving multiple data records by radio signal, each data record including time and location sensitive advertising information;

storing said data records;

calculating current location for said vehicle; and

selecting for display specific time and location specific advertising information depending upon the location of said vehicle;

displaying said selected time and location specific advertising information.

17. A method of providing travel information at a vehicle, the method comprising the steps:

collecting records relevant to multiple geographic points of interest, said information including a geographic location for each of said geographic points of interest;

detecting said vehicle position;

selecting for display records based upon the relative location of said vehicle and the location of the geographic point in the selected record; and

displaying relative to a current location as established in said detecting step a distance to and a distance toward a selected one of said geographic points of interest.

REMARKS:

This is a preliminary amendment being filed with an FWC application. This preliminary amendment is being filed in response to the Office Action dated 07/18/95. A notice of appeal was filed in the parent application on 11/13/95.

Claims 15, 16 and 17 are now in this application. These claims correspond somewhat to previous claims 1, 7 and 11 which have been canceled.

Applicant's prior claim 1 was rejected under 35 U.S.C. §112 second paragraph as indefinite. The problem noted by the examiner has been corrected in the newly submitted claims.

Prior claims 1, 7 and 11 were rejected under 35 U.S.C. § 102 (b) based upon Kashiwazaki. The Kashiwazaki reference shows a system for a vehicle which includes a CD ROM 23 which stores data, a GPS receiver 20 which indicates the location of the receiver, and a memory 30 which stores Schedule data. A map is displayed from the data on the CD ROM. The location of the vehicle is determined by the GPS receiver. The location of the vehicle at any instant is compared to where the vehicle should be according to the schedule information, as indicated at column 6, lines 47 et. seq.

> "In this manner, the schedule data as for the destination of driving, is stored and judged every time when the map is displayed, and the position of the destination and various information related to the destination are automatically displayed in the display map"

Thus, the purpose and operation of the system shown in Kashiwazaki are to determine the location of the vehicle relative to a pre-established schedule information which is stored in the system and to display information relative to the location of the vehicle.

In contrast to the above, the applicant's system is directed to displaying time and location sensitive advertising information. With the applicant's system a large number

of information records are sent to the vehicle by radio. Each record includes a particular piece of time and location sensitive advertising information. At the vehicle the records are selected for display depending upon the time of day and upon the location of the vehicle. As stated in claims 15:

" said selection being at least in part based on the time of day and upon the location of said vehicle "

Applicant's system is dealing with a different type of information than is the reference and the selection process for displaying information is different. Since the reference does not show or suggest applicant's invention, allowance of claims 15, 16 and 17 is respectfully requested.

Respectfully submitted,

Elmer W. Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, Oregon 97006
Direct calls to: (503) 531-1516

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/585,604	01/16/96	PARK	M P126-EWC

EXAMINER
BLUM, T

ART UNIT	PAPER NUMBER
2202	12

DATE MAILED: 06/21/96

22M2/0621

ELMER GALBI
SEIKO COMMUNICATIONS SYSTEM INC
1625 N W AMBER GLEN COURT SUITE 140
BEAVERTON OR 97006

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☑ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), ____ days from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☑ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice of Draftsman's Patent Drawing Review, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____

Part II SUMMARY OF ACTION

1. ☑ Claims 15-17 are pending in the application.

   Of the above, claims _____ are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☑ Claims 15-17 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☑ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

PTOL-326 (Rev. 2/93)

1.The preliminary amendments filed January 16, 1996 are acknowledged.

2. Claims 16 and 17 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 16, it is unclear if the displayed "specific time and location specific advertising information" is the received "time and location sensitive advertising information".

In the last two lines of claim 17, "established in said detecting step a distance to and a distance toward" is indefinite.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claim 17 is rejected under 35 U.S.C. § 102(e) as being anticipated by Kashiwazaki.

Kashiwazaki teaches the claimed method for providing travel information relative to vehicle location including: determining the current location of the vehicle (GPS receiver 20), transmitting information of potential interest (received by vehicle receiver 29 shown in Figure 10, see column 7, lines 65+) including records (Figure 2),

each record including at least a location corresponding to a geographic point (Figure 2),
selecting at each travel information device (vehicle) ones of said records (Figure 2) for display (Figure 8),
said selection being based on the location of said vehicle (column 8, lines 14-24).

5. Claims 15-17 are rejected under 35 U.S.C. § 102(e) as being anticipated by Schreder.

Schreder teaches the claimed method of providing time and location sensitive advertising information to the operator of a moving vehicle including: receiving multiple data records (column 13, lines 14-37), storing data 46, calculating current location for said vehicle (18 and 20), "selecting" (column 8, lines 60-67, and column 13, lines 24-37), and displaying 48.

6. Claim 17 is rejected under 35 U.S.C. § 102(e) as being anticipated by Fruchterman et al.

Fruchterman et al teaches the claimed method of providing traveling information at a vehicle (column 11, lines 18-22) including: collecting records of points of interest (column 12, lines 23-35, and column 16, lines 65-67, for example), "selecting" (column 11, lines 6-22), and displaying 8.

7. Claim 17 is rejected under 35 U.S.C. § 102(e) as being anticipated by Sato et al.

Sato et al teaches the claimed method of providing traveling information at a vehicle including: collecting records of points of interest (12, 13, 24, Figures 5 and 9), "selecting" (16), and displaying 23.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 17 is rejected under 35 U.S.C. § 102(b) as being anticipated by Wortham.

Wortham teaches the claimed method of providing traveling information at a vehicle including: collecting records of points of interest (column 9, lines 60-68), "selecting" (column 9, lines 60-68), and displaying 258.

10. The Fisher patent is cited to show a vehicle location system, note claim 12.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theodore Blum whose telephone number is (703) 305-1833.

Theodore M. Blum

THEODORE M. BLUM
EXAMINER
GROUP ART UNIT 222

June 18, 1996

TO SEPARATE, HOLD TOP AND BOTTOM EDGES, SNAP--APART AND DISCARD CARBON

FORM PTO-892 (REV. 2-92) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

NOTICE OF REFERENCES CITED

SERIAL NO.	GROUP ART UNIT	ATTACHMENT TO PAPER NUMBER
08/585604	2202	12

APPLICANT(S): PARK

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	A	5,536,544,9	11-96	KASHIWAZAKI	364	469	9-92
	B	5,550,448,2	4-96	SCHREDER	340	995	6-93
	C	5,470,233	11-95	FRUCHTERMAN ET AL	434	112	3-94
	D	5,353,034	10-94	SATO ET AL	342	457	2-93
	E	5,299,132	3-94	WORTHAM	364	460	
	F	5,507,485	4-96	FISHER	273	32R	4-94
	G						
	H						
	I						
	J						
	K						

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS DWG	PP. SPEC.
	L								
	M								
	N								
	O								
	P								
	Q								

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

R

S

T

U

EXAMINER	DATE
T. BLUM	6-18-96

* A copy of this reference is not being furnished with this office action. (See Manual of Patent Examining Procedure, section 707.05 (a).)

13 GP2202
Req. Ext Time
Ext
12 mo
Cofer
11-21-96

I hereby certify that on Nov 5, 1996 this document is being deposited with the United States Postal Service as FIRST CLASS MAIL addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231

By: [signature]
Elmer Galbi, Reg. No. 19,761,
Seiko Communications Systems Inc.
1625 NW Amber Glen Court, #140
Beaverton, OR 97006 Telephone 503-531-1516

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:	
Serial Number: 08/585,604	Art Group: 2202
Filing Date: 01/16/96	Examiner: Blum, T.
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Referencing Vehicle Location	Docket: P126-FWC

Date of this paper: November 5, 1996

Petition for an Extension of Time to Respond

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Applicant petitions for a two month extension of time to respond to the Office Action dated 06/21/96.

An appropriate response to the Office Action is being filed herewith.

Please charge the fee for this petition ($390.00) and any other appropriate fees in this application to the undersigned's Deposit Account No. 19-1140.

RECEIVED
NOV 20 1996
GROUP 2200

Respectfully submitted,

[signature]

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

I hereby certify that on 11-5, 1996 this document is being deposited with the United States Postal Service as FIRST CLASS MAIL addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi

Elmer Galbi, Reg. No. 19,761,
Seiko Communications Systems Inc
1625 NW Amber Glen Court, #140
Beaverton, OR 97006 Telephone 503-531-1516

11-21-96

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:	
Serial Number: 08/585,604	Art Group: 2202
Filing Date: 01/16/96	Examiner: Blum, T.
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Referencing Vehicle Location	Docket: P126-FWC

Date of this paper: November 5, 1996

Amendment Responsive to Office Action Dated 06/21/96

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Please amend the subject application as follows:

In the Claims:

Please cancel claim 17.

Please amend claim 16 as follows:

(see next page)

16 (amended). A method of providing time and location sensitive advertising information to the operator of a moving vehicle, the method comprising the steps:

receiving multiple data records by radio signal, each data record [including] containing time of day information and location sensitive advertising information;

storing said data records;

calculating current location for said vehicle; and

selecting for display [specific] one of said records containing time of day information and location specific advertising information depending upon the time of day information and the location of said vehicle;

displaying said selected record containing time of day information and location specific advertising information.

REMARKS:

This amendment is responsive to the Office Action dated 6/21/96. A petition for an extension of time to respond is being filed herewith. Claim 17 has been canceled. Claims 15 and 16 are now in this application. Reconsideration and allowance of claims 15 and 16 as amended is respectfully requested for the reasons explained below.

Claims 16 and 17 were rejected under 35 U.S.C. § 112 as indefinite. The potential problems noted by the examiner have been corrected by the above amendments to these claims.

Claims 15-17 were rejected under 35 U.S. C. § 102(e) as being anticipated by Schreder. Schreder shows an automobile navigation and guidance system which receives traffic flow information by radio (see column 6 lines 47 et. seq). The system includes a GPS receiver which gives position information and an inertial navigation system which provides additional position information and which also senses if the vehicle is involved in an accident (see column 6 lines 57 et. seq.). The system shown in Schreder uses RF telecommunications to automatically report the location of the vehicle in the case of an accident. The system also provides the driver with route guidance information.

The invention claimed by the applicant in claims 15 and 16 is directed to and serves an entirely different purpose than does the system shown in Schreder. Furthermore, the elements which comprise the applicant's system are not found in the system shown in the Schreder reference. Applicant's system is directed to providing time and location sensitive advertising material to a driver. The advertising material is sent to the vehicle by radio because the material is time sensitive. A particular piece of time and location advertising material is then presented to the

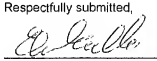
driver depending upon the time of day and the location of the vehicle. No such system is shown or suggested in the Schreder reference.

The novel elements which comprise applicant's system are specifically recited in applicant's claims. For example claim 16 recites:

> "selecting for display one of said records containing time of day information and location specific advertising information depending upon the time of day information and the location of said vehicle;
>
> displaying said selected record containing time of day information and location specific advertising information."

Since the references do not show or suggest applicant's novel invention, allowance of claims 15 and 16 is respectfully requested.

Respectfully submitted,



Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:	
Serial Number: 08/585,604	Art Group: 2202
Filing Date: 01/16/96	Examiner: Blum, T.
Inventor(s) : Michael C. Park	
Title: Dual Channel Advertising Referencing Vehicle Location	Docket: P126-FWC

Date of this paper: November 5, 1996

Transmittal Letter

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Transmitted for filing are the following:

a) Petition for an Extension of Time to Respond
b) Amendment Responsive to Office Action dated 06/21/96
d) Return postcard

Please charge the fee of $390 00 for the petition for extension of time to respond and any other appropriate fees to **Deposit Account No. 19-1140**.

Respectfully submitted,

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
[illegible]	[illegible]	PARK	[illegible]

22M1/1127

ELMER GALBI
SEIKO COMMUNICATIONS SYSTEM INC
1625 N W AMBER GLEN COURT SUITE 140
BEAVERTON OR 97006

EXAMINER	
BLUM, T	

ART UNIT	PAPER NUMBER
2202	15

11/26/96

DATE MAILED:

NOTICE OF ALLOWABILITY

PART I.

1. ☑ This communication is responsive to *the amendment filed 11-8-96*.
2. ☑ All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
3. ☑ The allowed claims are *15, 16*.
4. ☐ The drawings filed on ______ are acceptable.
5. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has [_] been received. [_] not been received. [_] been filed in parent application Serial No. ______, filed on ______.
6. ☐ Note the attached Examiner's Amendment.
7. ☐ Note the attached Examiner Interview Summary Record, PTOL-413.
8. ☐ Note the attached Examiner's Statement of Reasons for Allowance.
9. ☐ Note the attached NOTICE OF REFERENCES CITED, PTO-892.
10. ☐ Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

PART II.

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

1. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
2. ☑ APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
   a. ☑ Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. *3*. CORRECTION IS REQUIRED.
   b. ☐ The proposed drawing correction filed on ______ has been approved by the examiner. CORRECTION IS REQUIRED.
   c. ☐ Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
   d. ☑ Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

Attachments:

- _ Examiner's Amendment
- _ Examiner Interview Summary Record, PTOL-413
- _ Reasons for Allowance
- _ Notice of References Cited, PTO-892
- _ Information Disclosure Citation, PTO-1449
- _ Notice of Informal Application, PTO-152
- _ Notice re Patent Drawings, PTO-948
- _ Listing of Bonded Draftsmen
- _ Other

Theodore M. Blum
THEODORE M. BLUM
EXAMINER
GROUP ART UNIT 222

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: Box ISSUE FEE
ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

22M1/1126

PALMER HALEY
SEIKO COMMUNICATIONS SYSTEM INC
1625 N W AMBER GLEN COURT SUITE 140
BEAVERTON OR 97006

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/580,604	01/16/96	002	BLUM, T 2202	11/26/96

First Named Applicant: PARK MICHAL C

TITLE OF INVENTION: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 PT2s-P96C	342-357.000	092	UTILITY	NO	$1290.00	02/26/97

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as yes, verify your current SMALL ENTITY status:

A. If the status is changed, pay twice the amount of the FEE DUE shown and notify the Patent and Trademark Office of the change in status, or

B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

A. Pay FEE DUE shown above, or

B. File verified statementof Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "6b" of Part B should be completed.

III. All communications regarding this application must give application number and batch number. Please direct all communication prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

3. PATENT AND TRADEMARK OFFICE COPY

BATCH: G92
SERIAL NO.: 08/585,604
FILING DATE: 01/16/96

EXPRESS MAIL LABEL NO. EF 865-834-765 US

Date of Deposit: 12/20 1996

I hereby certify that this is being deposited with the United States Postal Service "Express Mail, Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Box Issue Fee, Washington, D.C. 20231.

By: _____
Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 NW Amber Glen Court, Suite 140
Beaverton, OR 97006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED
Publishing Division
DEC 20 1996
06

In re application:

Serial Number: 08/585,604

Filing Date: 01/16/96

Inventor(s) : Michael C. Park

Title: Dual Channel Advertising Referencing Vehicle Location

Art Group: 2202

Examiner: Blum, T.

Docket: P126-FWC

Date of this paper: December 20, 1996

LETTER TO THE CHIEF DRAFTSMAN

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Enclosed are the formal drawings for the subject application. **Six sheets of formal drawings are enclosed.** We have received a NOTICE OF ALLOWANCE AND ISSUE FEE DUE for the subject application.

The enclosed drawings conform to the previous informal drawings and add no new matter. The serial number and art group are written on the reverse side of the drawings. If there are any problems with the enclosed drawings, you can contact applicant's attorney by telephone at 503-531-1516.

Respectfully submitted,

Elmer Galbi, Reg. No. 19,761
Seiko Communications Systems, Inc.
1625 N.W. Amber Glen Court, #140
Beaverton, OR 97006
Direct phone calls to: (503)531-1516

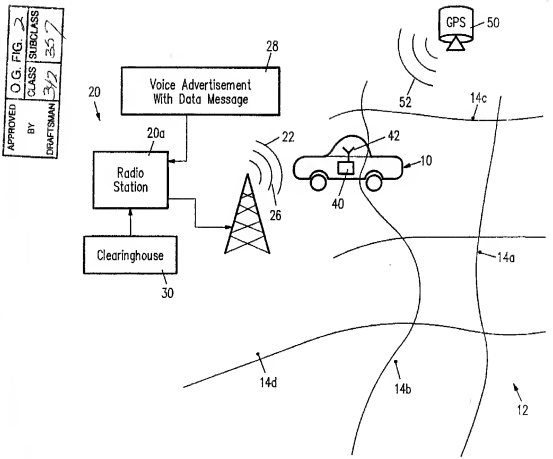


FIG. 1

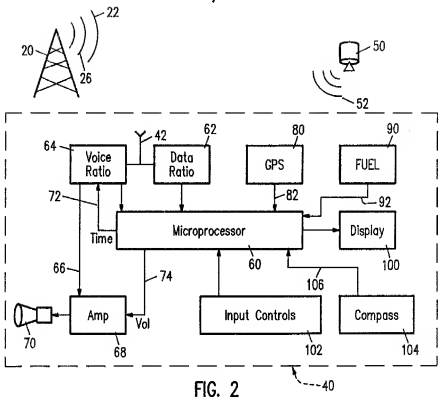


FIG. 2

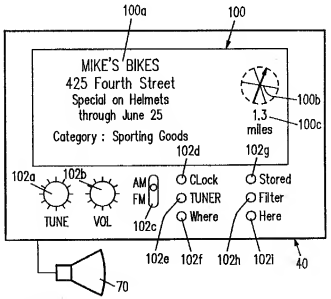


FIG. 3

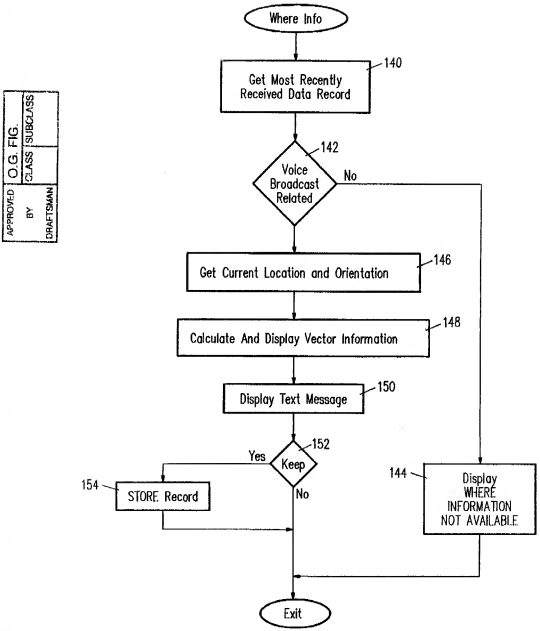

Where Info
Get Most Recently Received Data Record
140
Voice Broadcast Related
142
No
Get Current Location and Orientation
146
Calculate And Display Vector Information
148
Display Text Message
150
Keep
152
Yes
No
154
STORE Record
144
Display WHERE INFORMATION NOT AVAILABLE
Exit
APPROVED BY DRAFTSMAN
O.G. FIG. CLASS SUBCLASS

FIG. 4

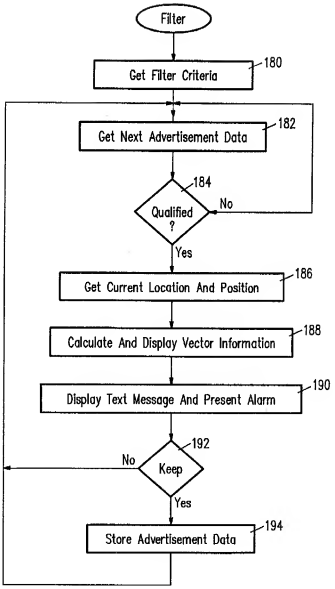


FIG. 5

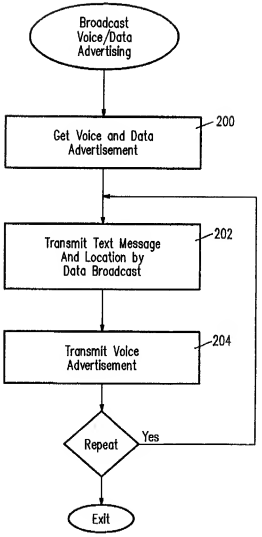


FIG. 6

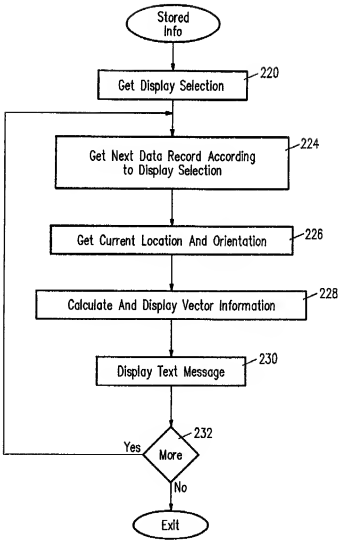


FIG. 7

PART B—ISSUE FEE TRANSMITTAL

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 2 through 6 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to addresses entered in Block 1 unless you direct otherwise, by: (a) specifying a new correspondence address in Block 3 below; or (b) providing the PTO with a separate "FEE ADDRESS" for maintenance fee notifications with the payment of Issue Fee or thereafter. **See reverse for Certificate of Mailing, below.**

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending on the needs of the individual case. Any comments on the amount of time required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231

DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Issue Fee, Assistant Commissioner for Patents, Washington D.C. 20231

1. CORRESPONDENCE ADDRESS

2MM1/1126

ELMER GALBI
SEIKO COMMUNICATIONS SYSTEM INC
1625 N W AMBER GLEN COURT SUITE 100
BEAVERTON OR 97006

2. INVENTOR(S) ADDRESS CHANGE (Complete only if there is a change)

INVENTOR'S NAME

Street Address

City, State and Zip Code

CO-INVENTOR'S NAME

Street Address

City, State and Zip Code

☐ Check if additional changes are enclosed

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Publishing Division
JAN 17 1997
06

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/587,604	01/16/96	002	BLUM, T 2202	11/26/96

First Named Applicant: PARK, MICHAL C

TITLE OF INVENTION: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
P126-PUC	342-357.000	692	UTILITY	NO	$1290.00	02/26/97

3. Correspondence address change (Complete only if there is a change)

4. For printing on the patent front page, list the names of not more than 3 registered patent attorneys or agents OR, alternatively, the name of a firm having as a member a registered attorney or agent. If no name is listed, no name will be printed.

1 Elmer Galbi
2
3

5. ASSIGNMENT DATA TO BE PRINTED ON THE PATENT (print or type)

(1) NAME OF ASSIGNEE: Seiko Communications Holding N.V.

(2) ADDRESS (CITY & STATE OR COUNTRY): Netherlands Antilles

A. ☐ This application is NOT assigned.

☒ Assignment previously submitted to the Patent and Trademark Office.

☐ Assignment is being submitted under separate cover. Assignment should be directed to Box ASSIGNMENTS.

PLEASE NOTE: Unless an assignee is identified in Block 5, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

6a. The following fees are enclosed:
☐ Issue Fee ☐ Advance Order - # of Copies

6b. The following fees should be charged to: 19-1140
DEPOSIT ACCOUNT NUMBER
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☐ Any Deficiencies in Enclosed Fees

The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the Issue Fee to the application identified above.

(Authorized Signature) (Date) 1/16/97

NOTE: The Issue Fee will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office

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Note: If this certificate of mailing is used, it can be used to transmit the Issue Fee. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: **Box ISSUE FEE**
Assistant Commissioner for Patents
Washington, D.C. 20231

19-1140 01 FC:142 1,290.00CH
02119 561 15.00CH

on: Jan 13, 1997 (Date)
Elmer Galbi (Name of person making deposit)
(Signature)
Jan 13 1997 (Date)

1. TRANSMIT THIS FORM WITH FEE

PTO UTILITY GRANT
Paper Number 10

The Commissioner of Patents and Trademarks

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

The United States of America

PATENT AND TRADEMARK OFFICE
UNITED STATES OF AMERICA

Bruce Lehman

Commissioner of Patents and Trademarks

Marjorie V. Turner

Attest

Form PTO-1584 (Rev. 5/96)

(RIGHT INSIDE)

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

CHANGE OF ADDRESS/POWER OF ATTORNEY

FILE LOCATION 9200 SERIAL NUMBER 08585604 PATENT NUMBER 5627549

THE CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 23396

THE PRACTITIONERS OF RECORD HAVE BEEN CHANGED TO CUSTOMER # 23396

THE FEE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 23396

ON 04/12/01 THE ADDRESS OF RECORD FOR CUSTOMER NUMBER 23396 IS:

ELMER GALBI
13314 VERMEER DRIVE
LAKE OSWEGO OR 97035

AND THE PRACTITIONERS OF RECORD FOR CUSTOMER NUMBER 23396 ARE:

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PTO INSTRUCTIONS: PLEASE TAKE THE FOLLOWING ACTION WHEN THE CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER NUMBER: RECORD, ON THE NEXT AVAILABLE CONTENTS LINE OF THE FILE JACKET, 'ADDRESS CHANGE TO CUSTOMER NUMBER'. LINE THROUGH THE OLD ADDRESS ON THE FILE JACKET LABEL AND ENTER ONLY THE 'CUSTOMER NUMBER' AS THE NEW ADDRESS. FILE THIS LETTER IN THE FILE JACKET. WHEN ABOVE CHANGES ARE ONLY TO FEE ADDRESS AND/OR PRACTITIONERS OF RECORD, FILE LETTER IN THE FILE JACKET.
THIS FILE IS ASSIGNED TO GAU 2202.

CODE SHEET FOR CONTINUING DATA

Line	Code	Serial No.	Filing Date	Status	Document No.	Issue Date
104	71	282893	7/29/94	03		
105						
106						
107						
108						
109						
110						
111						
112						
113						
114						
115						
116						
117						

Condition and Status Codes for Continuing Data

CONDITION CODE

71	Continuation of Ser. No.
81	which is a continuation of Ser. No.
91	and a continuation of Ser. No.
72	Continuation-in-part of Ser. No.
82	which is a continuation-in-part of Ser. No.
75	and a continuation-in-part of Ser. No.
74	Division of Ser. No.
84	which is a division of Ser. No.
76	and a division of Ser. No.
86	, said Ser. No.
89	Ser. No.
90	and Ser. No.
92	each

STATUS CODE

01	Patent No.
03	abandoned
04	Defensive Publication No.
05	Published Application No.
06	Reissue Patent No.

NOTE I: When the codes 86 and 92 are used, they must be followed by 81, 82 or 84 -- conditions beginning with "which is"

NOTE II: Codes 71, 72 and 74 may be used only on the first line; one of them must be used on the first line.

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 1995

Application or Docket Number: 585604

CLAIMS AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA
BASIC FEE		
TOTAL CLAIMS	14 minus 20 =	* —
INDEPENDENT CLAIMS	3 minus 3 =	* —
MULTIPLE DEPENDENT CLAIM PRESENT		

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY RATE	SMALL ENTITY FEE		OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY FEE
	375.00	OR		750.00
x$11=		OR	x$22=	
x39=		OR	x78=	
+125=		OR	+250=	
TOTAL		OR	TOTAL	750

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 12	Minus	** 20	= —
Independent	* 2	Minus	*** 3	= —
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY RATE	SMALL ENTITY ADDITIONAL FEE		OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY ADDITIONAL FEE
x$11=		OR	x$22=	
x39=		OR	x78=	
+125=		OR	+250=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY RATE	SMALL ENTITY ADDITIONAL FEE		OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY ADDITIONAL FEE
x$11=		OR	x$22=	
x39=		OR	x78=	
+125=		OR	+250=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY RATE	SMALL ENTITY ADDITIONAL FEE		OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY ADDITIONAL FEE
x$11=		OR	x$22=	
x39=		OR	x78=	
+125=		OR	+250=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Form PTO 1130
(REV 3/94)

PACE DATA ENTRY CODING SHEET

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

1ST EXAMINER 258 DATE 2/5

2ND EXAMINER DATE

APPLICATION NUMBER	TYPE APPL	FILING DATE MONTH DAY YEAR	SPECIAL HANDLING	GROUP ART UNIT	CLASS	SHEETS OF DRAWING
08/585604	1	01 17 96		2202	342	17

TOTAL CLAIMS	INDEPENDENT CLAIMS	SMALL ENTITY?	FILING FEE	FOREIGN LICENSE	ATTORNEY DOCKET NUMBER
14	3		750	Y	P1126-FWC

CONTINUITY DATA

CONT CODE	STATUS CODE	PARENT APPLICATION SERIAL NUMBER	PCT APPLICATION SERIAL NUMBER	PARENT PATENT NUMBER	PARENT FILING DATE MONTH DAY YEAR
02	2	08282389 3	PCT/		07 29 94
			PCT/		
			PCT/		
			PCT/		
			PCT/		

PCT/FOREIGN APPLICATION DATA

FOREIGN PRIORITY CLAIMED	COUNTRY CODE	PCT/FOREIGN APPLICATION SERIAL NUMBER	FOREIGN FILING DATE MONTH DAY YEAR

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 1992

Application or Docket Number: JR0813

CLAIMS AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE	SMALL ENTITY FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY FEE
BASIC FEE				$355.00	OR		$710.00
TOTAL CLAIMS	12 minus 20 =	*	x$11=		OR	x$22=	
INDEPENDENT CLAIMS	3 minus 3 =	*	x 37=		OR	x 74=	
MULTIPLE DEPENDENT CLAIM PRESENT			+115=		OR	+230=	
			TOTAL		OR	TOTAL	710

* If the difference in column 1 is less than zero, enter "0" in column 2

CLAIMS AS AMENDED - PART II

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE	SMALL ENTITY ADDITIONAL FEE	OR	OTHER THAN SMALL ENTITY RATE	OTHER THAN SMALL ENTITY ADDITIONAL FEE
AMENDMENT A									
Total	* 3	Minus	** 20	=	x$11=		OR	x$22=	
Independent	* 3	Minus	*** 3	=	x 37=		OR	x 74=	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+ 115=		OR	+230=	
					TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	
AMENDMENT B									
Total	*	Minus	**	=	x$11=		OR	x$22=	
Independent	*	Minus	***	=	x 37=		OR	x 74=	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+ 115=		OR	+ 230=	
					TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	
AMENDMENT C									
Total	*	Minus	**	=	x$11=		OR	x$22=	
Independent	*	Minus	***	=	x 37=		OR	x 74=	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+115=		OR	+230=	
					TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Form PTO 1130
(REV 2/94)

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

PACE DATA ENTRY CODING SHEET

1ST EXAMINER [illegible] DATE 5/24/94

2ND EXAMINER DATE

APPLICATION NUMBER	TYPE APPL	FILING DATE MONTH DAY YEAR	SPECIAL HANDLING	GROUP ART UNIT	CLASS	SHEETS OF DRAWING
08/282893	1	07/29/94	5	2826	345	7

TOTAL CLAIMS	INDEPENDENT CLAIMS	SMALL ENTITY?	FILING FEE	FOREIGN LICENSE	ATTORNEY DOCKET NUMBER
14	3	1	710	4	P1264

CONTINUITY DATA

CONT CODE	STATUS CODE	PARENT APPLICATION SERIAL NUMBER	PCT APPLICATION SERIAL NUMBER	PARENT PATENT NUMBER	PARENT FILING DATE MONTH DAY YEAR
			PCT / /		
			PCT / /		
			PCT / /		
			PCT / /		
			PCT / /		

PCT/FOREIGN APPLICATION DATA

FOREIGN PRIORITY CLAIMED	COUNTRY CODE	PCT/FOREIGN APPLICATION SERIAL NUMBER	FOREIGN FILING DATE MONTH DAY YEAR

United States Patent and Trademark Office

Patent Bibliographic Data				01/04/2007 12:46 PM	
Patent Number:	5627549		Application Number:	08585604	
Issue Date:	05/06/1997		Filing Date:	01/16/1996	
Title:	DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION				
Status:	12th year fee window opens: 05/06/2008			Entity:	Large
Window Opens:	05/06/2008	Surcharge Date:	11/07/2008	Expiration:	N/A
Fee Amt Due:	Window not open	Surchg Amt Due:	Window not open	Total Amt Due:	Window not open
Fee Code:	1553	MAINTENANCE FEE DUE AT 11.5 YEARS			
Surcharge Fee Code:					
Most recent events (up to 7):	2004/09/22 2000/09/28	Payment of Maintenance Fee, 8th Year, Large Entity. Payment of Maintenance Fee, 4th Year, Large Entity. --- End of Maintenance History ---			
Address for fee purposes:	ELMER GALBI 13314 VERMEER DRIVE LAKE OSWEGO, OR 97035				

US005627549A

United States Patent [19]

Park

[11] Patent Number: 5,627,549

[45] Date of Patent: May 6, 1997

[54] **DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION**

[75] Inventor: **Michael C. Park**, Portland, Oreg.

[73] Assignee: **Seiko Communications Holding N.V.**, Netherlands Antilles

[21] Appl. No.: **585,604**

[22] Filed: **Jan. 16, 1996**

Related U.S. Application Data

[63] Continuation of Ser. No. 282,893, Jul. 29, 1994, abandoned.

[51] **Int. Cl.**[6] **H04B 7/185**; G01S 5/02

[52] **U.S. Cl.** **342/357**; 364/449.1; 340/996

[58] **Field of Search** 342/357; 364/449; 340/996

[56] **References Cited**

U.S. PATENT DOCUMENTS

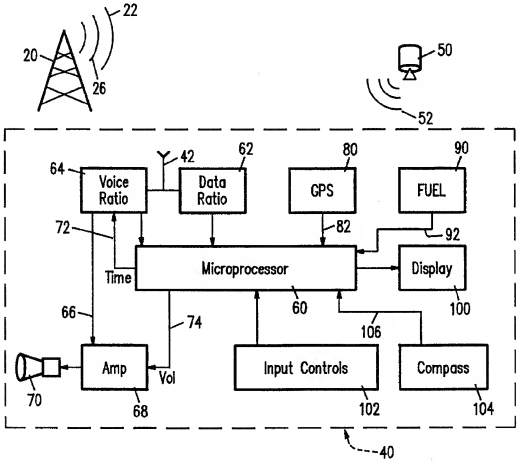
5,299,132	3/1994	Wortham	364/460
5,303,393	4/1994	Noreen et al.	455/12.1
5,353,034	10/1994	Sato et al.	342/457
5,359,527	10/1994	Takanabe et al.	364/449
5,365,449	11/1994	Kashiwazaki	364/449
5,470,233	11/1995	Fruchterman et al.	434/112
5,504,482	4/1996	Schreder	340/995
5,507,485	4/1996	Fisher	273/32 R

Primary Examiner—Theodore M. Blum
Attorney, Agent, or Firm—Elmer Galbi

[57] **ABSTRACT**

A vehicle information device and collects information concerning specific geographic points of interest. The operator recalls for display such information, including a display showing direction and distance of travel to a designated geographic point of interest relative to a then-current vehicle location. Dual channel advertising is transmitted by voice broadcast and by data broadcast. Upon hearing in the voice broadcast an advertisement of interest, the operator captures the associated data broadcast including, among other detailed text message information, the location of the advertiser. Distance and relative direction of travel from the current vehicle location to the geographic point of interest is thereby presented. Multiple geographic points of interest are stored for selective review whereby the user constructs a database containing locations of particular interest to a particular person.

2 Claims, 6 Drawing Sheets



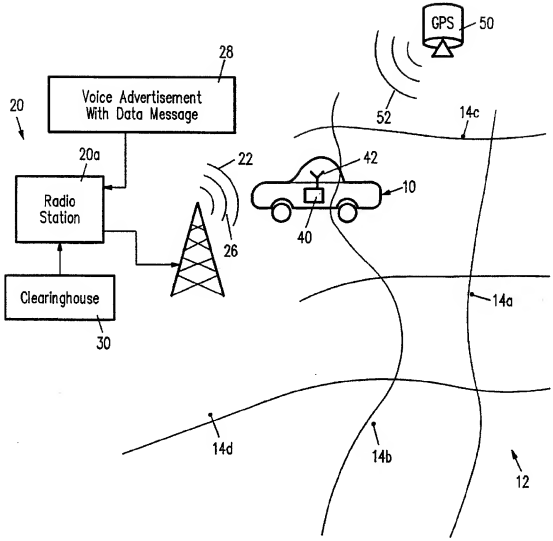

GPS
50
28
Voice Advertisement With Data Message
20
20a
Radio Station
22
26
42
10
40
52
14c
14a
Clearinghouse
30
14d
14b
12

FIG. 1

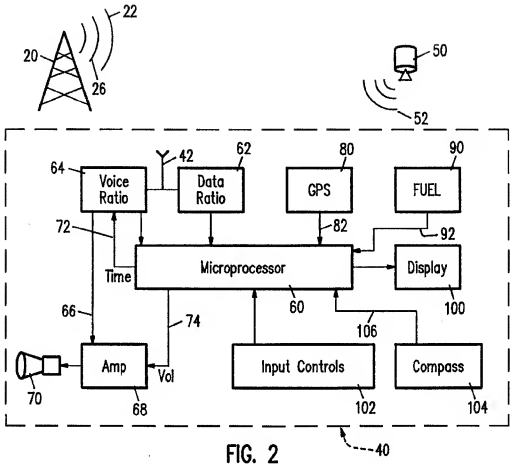

22
20
26
50
52
42
62
80
90
64
Voice Ratio
Data Ratio
GPS
FUEL
72
82
92
Time
Microprocessor
Display
66
74
60
100
106
Amp
Vol
Input Controls
Compass
70
68
102
104
40

FIG. 2

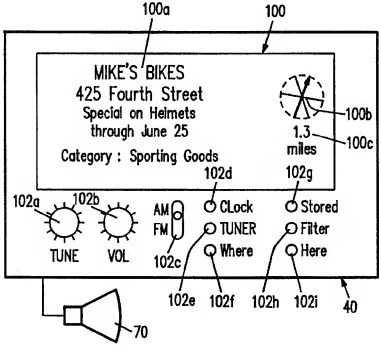

100a
100
MIKE'S BIKES
425 Fourth Street
Special on Helmets
through June 25
Category : Sporting Goods
100b
1.3
miles
100c
102d
102g
102a
102b
AM
FM
CLock
TUNER
Where
Stored
Filter
Here
TUNE
VOL
102c
102e
102f
102h
102i
40
70

FIG. 3

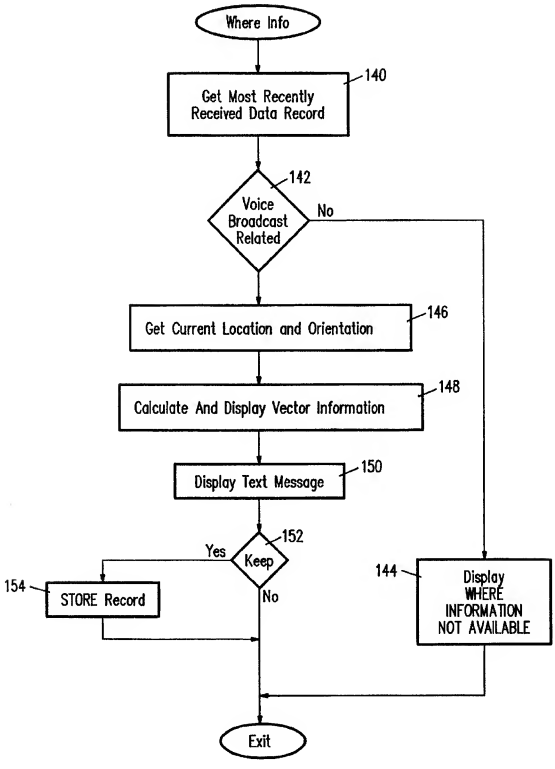

Where Info
Get Most Recently Received Data Record
140
Voice Broadcast Related
142
No
Get Current Location and Orientation
146
Calculate And Display Vector Information
148
Display Text Message
150
Keep
152
Yes
No
154
STORE Record
144
Display WHERE INFORMATION NOT AVAILABLE
Exit

FIG. 4

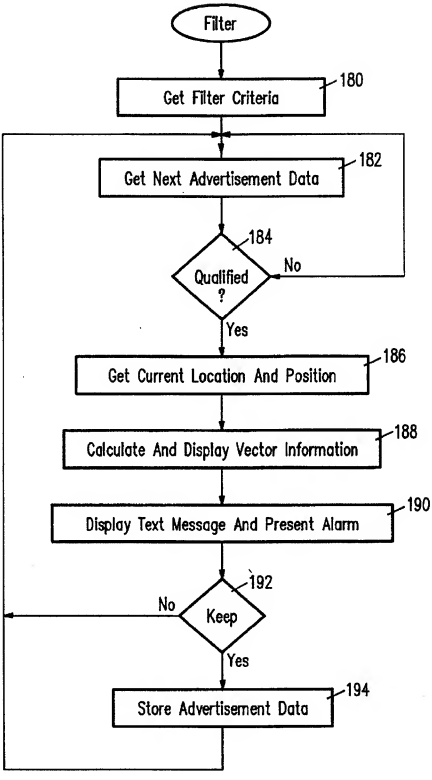

Filter
Get Filter Criteria
180
Get Next Advertisement Data
182
Qualified ?
184
No
Yes
Get Current Location And Position
186
Calculate And Display Vector Information
188
Display Text Message And Present Alarm
190
Keep
192
No
Yes
Store Advertisement Data
194

FIG. 5

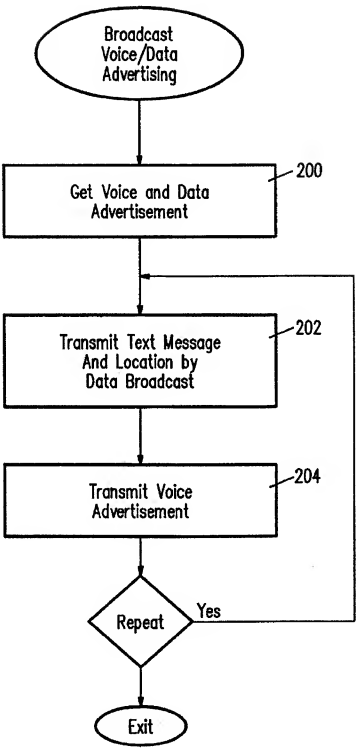

Broadcast Voice/Data Advertising
Get Voice and Data Advertisement
200
Transmit Text Message And Location by Data Broadcast
202
Transmit Voice Advertisement
204
Repeat
Yes
Exit

FIG. 6

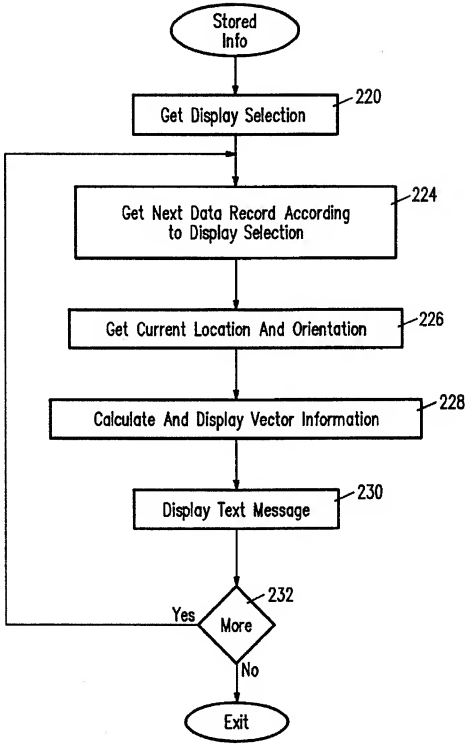

Stored Info
Get Display Selection
220
Get Next Data Record According to Display Selection
224
Get Current Location And Orientation
226
Calculate And Display Vector Information
228
Display Text Message
230
More
232
Yes
No
Exit

FIG. 7

DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

This application is a continuation of application Ser. No. 08/282,893, filed Jul. 29, 1994 which is now abandoned.

BACKGROUND OF THE INVENTION

The present invention relates generally to vehicle information systems, and particularly to vehicle information systems providing information relevant to current vehicle location.

A variety of traffic related information is now available for use in aiding vehicle travel, especially in urban road networks. A travel information device likely to be soon more commonly incorporated into vehicles is a vehicle position detecting system, e.g., the well known global positioning system (GPS) providing satellite broadcast to determine location of a receiving GPS device. Vehicles with GPS capability, therefore, have the very useful feature of tracking current vehicle position.

Given access to current vehicle location, i.e., longitude and latitude values, a proposed information system provides vehicle position relative to a map representation of a given region, e.g., a map display of city streets with vehicle position indicated by street location rather than longitude and latitude position. Thus, a digital map database further supports vehicle position display by reference to more meaningful information, i.e., by reference to a street map. To be of value, however, the digital map database must be current and comprehensive, i.e., have information relevant to wherever a vehicle may be used.

Massive digital map databases are, however, inherently expensive and difficult to include in mass produced products such as is desirable in a GPS-capable consumer product. Digital map databases require license fees, large amounts of memory, frequent and expensive revision, and generally cannot be comprehensive enough to allow use throughout the entire world. It is not economically feasible to provide in an inexpensive consumer product a digital map database covering the entire world, or at least a significant geographic region. If the device is prepared for use throughout the world, an incredibly massive digital map is required giving rise to significant cost and maintenance requirements. If only selected geographic regions are incorporated into the digital map, the device cannot be used outside such geographic regions without post-manufacture modification or manipulation of numerous storage devices, e.g., a library of CD-ROM discs.

It would be desirable, therefore, for a vehicle information device to be usable in any geographic area as manufactured yet still maintain an ability to indicate vehicle position information beyond merely longitude and latitude. In particular, people need more meaningful information than merely longitude and latitude, yet a massive digital map is difficult to justify in the context of relatively inexpensive consumer products. The need for current vehicle position is most typically a need to know current vehicle position relative to a location of interest. Unfortunately, customizing massive digital databases to provide reference to individual vehicle operator locations of interest is impractical. It would be desirable to avoid a requirement of procuring and maintaining in the travel information device a massive digital database, yet maintain an ability to reference geographic locations. The subject matter of the present invention provides such a vehicle travel information device.

SUMMARY OF THE INVENTION

In accordance with the present invention, a travel information device in a vehicle includes a vehicle position detecting device and collects vehicle position information while also collecting data relevant geographic points of interest to provide a display indicating position of a point of interest relative to a current vehicle location.

In the illustrated and preferred form of the present invention, collecting information relevant to geographic points of interest is by radio signal data broadcast in conjunction with radio signal voice broadcast, such as advertising, whereby a user interrogates a device under the present invention to collect by data broadcast detailed information concerning an advertisement of interest provided by a companion voice broadcast. The data broadcast includes precise location information providing, in conjunction with current vehicle position, a basis for presenting a display graphically showing relative position between the geographic point of interest, such as the location of an advertiser, and the current vehicle location.

According to one aspect of the present invention, storage of information relative to geographic points of interest builds for the user a personal electronic reference for later selectively displaying such information, including ability to selectively display a representation of location relative to a then current vehicle position.

The subject matter of the present invention is particularly pointed out and distinctly claimed in the concluding portion of this specification. However, both the organization and method of operation of the invention, together with further advantages and objects thereof, may be best understood by reference to the following description taken with the accompanying drawings wherein like reference characters refer to like elements.

BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of the invention, and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings in which:

FIG. 1 illustrates a vehicle information system, a given road network, and a vehicle travelling within the road network and carrying a travel information device according to a preferred form of the present invention.

FIG. 2 is a block diagram of the travel information device for the vehicle of FIG. 1.

FIG. 3 illustrates the front panel controls and display of the travel information device of FIG. 2 as viewed by the operator of the vehicle of FIG. 1.

FIG. 4 illustrates by flow chart a first method of collecting data for storage by the travel information device wherein the user hears by voice broadcast information of interest an selects corresponding data broadcast information for storage.

FIG. 5 illustrates by flow chart an alternative method for collecting information from the data broadcast whereby the operator designates collection criteria and the travel information device automatically collects qualifying data broadcast information.

FIG. 6 illustrates by flow chart programming for a radio broadcast system coordinating or associating voice radio broadcast with data radio broadcast.

FIG. 7 illustrates by flow chart programming of the travel information device of FIG. 1 for scanning or reviewing of information stored therein.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

In FIG. 1, a vehicle **10** travels within a road network **12**. Network **12** includes main arterial roadways as illustrated, but as may be appreciated would be significantly more complex. For the present illustration, it will be understood that vehicle **10** travels throughout road network **12** along any selected travel route. Furthermore, the operator of vehicle **10** travels within road network **12** to and from geographic points of interest **14**, individually designated **14***a*–**14***d*. While only several such geographic points of interest **14** are indicated in FIG. **1**, it will be understood that any number of such geographic points of interest **14** may exist within road network **12**. Furthermore, geographic points of interest **14** for one individual vary relative to that of another individual. Accordingly, reference herein to geographic points of interest **14** shall be taken to be locations of interest to a particular person.

Also illustrated in FIG. **1**, radio broadcast system **20** provides a combined radio signal voice broadcast **22** and radio signal data broadcast **26**. While illustrated as a single radio broadcast system **20**, it will be understood that voice broadcast **22** and data broadcast **26** could originate from separate radio signal broadcast facilities. Under the preferred form of the present invention, however, voice broadcast **22** and data broadcast **26** originate from a common FM radio source as provided under the "Gaskill" paging system. The present invention may be implemented according to many paging system protocols, but as illustrated herein operates under the time-division multiplexed protocol of the Gaskill paging system, as illustrated in U.S. Pat. Nos. 4,713,808 and 4,897,835. The disclosure of U.S. Pat. Nos. 4,713,808 and 4, 897,835 are incorporated herein fully by reference thereto.

The Gaskill paging system and associated receiving devices provide an inexpensive, highly battery-efficient and highly miniaturized paging device which, under the illustrated embodiment of the present invention, constitutes a data radio signal receiver **62** (FIG. **2**) as a conduit for data broadcast **26** delivery to device **40**.

Generally the Gaskill paging system uses FM radio signal transmission facilities to broadcast within a side-band frequency paging signal data packets according to a time-division multiplexed protocol. Thus, voice broadcast **22** comprises the normal FM radio signal broadcast and data broadcast **26** represents the side-band paging system broadcast.

It will be understood, therefore, that radio broadcast system **20** provides coordinated voice and data by radio signal. In particular, radio broadcast system **20** receives voice advertisement and data message information **28**, e.g., an advertising subscription, and integrates the data message portion thereof into other incoming paging system data packets originating from a Gaskill paging system clearinghouse **30**. In this manner, radio station **20***a* coordinates or associates voice and data broadcasts **22** and **26**, respectively. As may be appreciated, however, the data message portion of information **28** could be routed through clearinghouse **30**, in which case radio station **20***a* associates a voice broadcast **22** with a data broadcast **26** originating entirely from clearinghouse **30**. Such association may be provided by a number of arrangements, but under the illustrated form of the present invention, association of voice broadcast **22** and data broadcast **26** shall be by time relation, e.g., concurrently broadcast, broadcast in close time relationship, or at given time offset.

Vehicle **10** includes a travel information device **40** receiving by way of antenna **42** the voice broadcast **22** and data broadcast **26**. Thus, device **40** receives conventional FM voice broadcasts and paging data broadcasts the Gaskill paging system protocol. In this manner, device **40** receives associated voice and data broadcasts whereby an operator of vehicle **10**, upon hearing a voice broadcast of interest, captures the associated data broadcast to collect and store within device **40** detailed information, i.e., a data record including longitude and latitude, for a geographic point of interest **14**.

FIG. **1** also illustrates a global position system (GPS) satellite **50** providing transmission **52**. Details and use of GPS transmission and the collection of such transmission to determine location of a GPS receiver are well known. Use of GPS transmission **52** under the present invention is by incorporation of a global position system receiving device into travel information device **40** collection of a current vehicle position therewith as described more fully hereafter.

Thus, travel information device **40** receives several channels of information. First, voice broadcast **22** provided by radio broadcast system **20** provides to the vehicle operator a stream of voice information potentially including reference to geographic points of interest **14**, i.e., advertisers located within road network **12**. Second, data broadcast **26**, as provided in association with voice broadcast **22**, provides further detailed text message information captured selectively by device **40**, e.g., when commanded by the operator of vehicle **10**. This establishes, among other detailed information, a precise location for a geographic point of interest **14**. Third, the global position system transmission **52** provides a current vehicle location and, therefore, a basis for presenting location of geographic points of interest **14** relative to current vehicle position.

As described more fully hereafter, device **40** maintains a database containing a collection of data records obtained from data broadcast **26**. Each data record corresponds to a geographic point of interest **14**, and device **40** displays a vector, i.e., distance and direction, indicator illustrating the relative position of a given geographic point of interest **14** relative to current vehicle location. In this manner, device **40** constructs and maintains information specific to a user of device **40**, i.e., maintains information relative to geographic points of interest **14** selected by the operator of vehicle **10**, and further provides meaningful position information beyond longitude and latitude for such points of interest **14** without reference to a massive digital map database of the road network **12**. Device **40** maintains current information relative to a given geographic region and specific to selected geographic points of interest **14**. Under one aspect of the present invention, such geographic points of interest **14** correspond generally to locations of advertisers providing, by way of radio broadcast system **20**, both voice information in broadcast **22** and detailed message or text data in broadcast **26**. This allows listeners to later reference such data and locate the corresponding geographic point of interest **14** relative to a then current vehicle position.

FIG. **2** illustrates in block diagram travel information device **40**. In FIG. **2**, a microprocessor **60** orchestrates generally operation of device **40**. Data radio signal receiver **62** couples antenna **42** to microprocessor **60**. As contemplated under the preferred form of the present invention, data radio signal receiver **62** comprises essentially a paging system receiver operating under the Gaskill paging system. Thus, the Gaskill system paging device provided as receiver **62** serves as a data terminal collecting data broadcast **26** and providing to microprocessor **60** detailed information asso-

ciated with, for example, an associated voice advertisement broadcast in voice broadcast **22**. A voice radio receiver **64**, also coupled to antenna **42**, receives the voice broadcast **22** and delivers a voice signal **66** to an amplifier **68** driving a speaker **70**. Microprocessor **60** tunes voice radio receiver **64** by way of a tune control **72**. Thus, microprocessor **60** selects a radio signal voice broadcast **22** by tune control **72** and, by way of volume control **74** applied to amplifier **68**, causes presentation of the corresponding voice broadcast on speaker **70**.

A global position system receiver **80** receives the transmission **52** from global position system satellite **50** and delivers to microprocessor **60** a current vehicle location **82**. In this manner, microprocessor **60** requests from global position system radio receiver **80** a current vehicle location and receives in return the current vehicle location **82**.

Microprocessor **60** receives other vehicle information. For example, a fuel gauge sensor **90** provides a fuel remaining input **92** to microprocessor **60**.

Microprocessor **60** drives a display **100**. Display **100** presents, for example, tuning and station selection information relative to the voice radio receiver **60** to provide an FM radio capability wherein the operator of vehicle **10** manipulates input controls **102**, i.e., volume, station select, and other controls described more fully hereafter, to listen to a selected voice broadcast **22**. Display **100** further presents, as described more fully hereafter, data relevant to stored geographic points of interest **14** and also graphic indication, i.e., a vector indicating distance and direction, of a selected geographic point of interest **14** relative to the current vehicle location.

A compass **104** provides a vehicle orientation input **106** to microprocessor **60**. Device **40** uses the current vehicle position, i.e., as provided by vehicle location **82**, and also the current vehicle orientation, as provided by input **106**, to calculate a graphic indication, i.e., a display vector orientation, indicating direction of travel for a geographic point of interest **14** relative to the current vehicle position. To portray on display **100** the relative direction, i.e., toward the geographic point of interest, current vehicle orientation is considered. Thus, calculation and display of a vector on display **100** begins with calculation of distance between two points designated by longitude and latitude values, i.e., distance between the current vehicle location and the geographic point of interest **14**, and calculation of an angle of orientation for a direction of travel. In other words, display **100** has a fixed relationship relative to vehicle **10** and vehicle orientation input **106** supports an accurate display of a direction of travel as presented by vector icon on display **100**. Furthermore, the display presented may be updated as vehicle **10** moves and the distance between vehicle **10** and the geographic point of interest **14** changes and also as vehicle orientation changes.

FIG. **3** illustrates a front view of the travel information device **40** monitoring the combined voice and data broadcasts **22** and **26** and global positioning system broadcast **52**. FIG. **3** also illustrates display **100** and input controls **102**. Input controls **102** include a tune dial **102***a*, a volume dial **102***b* and an AM/FM switch **102***c*. As may be appreciated, device **40** operates, from a user perspective, in part as a conventional car radio. The user manipulates input controls **102***a*–**102***c* to listen to a voice broadcast **22** on speakers **70**. Additional control inputs **102** for device **40** include a clock button **102***d*, a tuner button **102***e*, a where information button **102***f*, a stored information button **102***g*, a filter button **102***h*, and a here button **102***i*. Use of input controls **102***d*–**102***i* will be explained more fully hereafter, but generally provide to the user various display presentations relative to display **100** and modes of operation for device **40**.

As illustrated in FIG. **3**, display **100** presents a text message display portion **100***a* showing information such as vendor name, address, and current marketing information, for example, a sale or promotional activity including a date of availability for the promotional activity. Display portion **100***a* further presents a category of vendor, e.g., sporting goods. As may be appreciated, the data records obtained from data broadcast **26** and stored in device **40** include a variety of fields as indicated generally by the display portion **100***a* in FIG. **3**. In such form, information maintained in device **40** may be manipulated in the manner of a database, e.g., searching, sorting, and other such database record management functions.

Display **100** further provides a vector angle portion **100***b* and a vector distance-to-travel portion **100***c*. As described herein above, angle portion **100***b* indicates the relative orientation of a direction of travel from the current vehicle location to a selected geographic point of interest **14**. Distance-to-travel portion **100***c* represents the distance separating the current vehicle location and the geographic point of interest. The angular orientation of portion **100***b* desirable takes into account the current vehicle **10** orientation input **106** as provided by compass **104**. Presentation of vector angle portion **100***b* should, therefore, indicate generally a direction of travel considering the viewer's perspective, i.e., looking at display **100** from within vehicle **10**, to indicate appropriately the relative orientation of a direct line-of-sight or direction-of-travel from the current vehicle position to the geographic point of interest **14**.

Clock button **102***d*, when pressed, causes presentation by microprocessor **60** on display **100** the current time of day. Tuner button **102***e*, when pressed, causes presentation on display **100** by microprocessor **60** information relevant to tuning voice broadcast radio **64**, e.g., frequency of station currently tuned, preset features available, and any other information normally displayed in connection with operation of a voice broadcast radio.

Where information button **102***f*, when pressed, indicates to microprocessor **60** operator desire to collect information from data broadcast **26**. For example, voice broadcast **22** and data broadcast **26** are synchronized broadcasts and the operator of device **40** hears an advertisement of interest provided by way of voice broadcast **22** and presses the where information button **102***f* for further information. Microprocessor **60** then collects a data record, i.e., text message information relative to the advertisement of interest, by way of data broadcast **26** and data receiver **62**. Text message information presented in display portion **100***a* is obtained, therefore, by the operator activating the where information button **102***f* during or just after a voice broadcast advertisement of interest.

Device **40** holds multiple data records, i.e., one for each geographic point of interest **14**. Stored information button **102***g* allows scanning through such stored data records and selective display of the previously stored data record for a geographic point of interest **14**. In this manner, the user of device **40** constructs a personal electronic reference tracking travel information including data records for particular geographic points of interest **14**, i.e., data records selected by and of interest to a particular user. The user thereby builds a personalized and current database of geographic points of interest **14**.

Filter button **102***h* drives device **40** into an automatic data collection mode according to user selected filter criteria. For

example, device **40** monitors the stream of data provided in data broadcast **22** and compares location information therein to the current vehicle location to collect all references within a given distance of current vehicle location. Additionally, the user establishes a category of interest, e.g., auto parts advertisements, grocery store advertisements, sporting goods or restaurant advertisements, to further filter information available in data broadcast **22**. In this manner, the user of device **40** creates automatically a customized database by designating geographic points of interest **14** according to user-selected criteria.

The here button **102***i* provides another method of creating a data record concerning a geographic point of interest **14** within device **40**, in this case one corresponding to current vehicle location. The operator presses here button **102***i* and creates a geographic point of interest **14** data record corresponding to current vehicle location. This allows the user to begin at a given location, operate here button **102***i*, and have ability to reference that given location later while travelling, e.g., to return to that given location or to have directional indication of that given location from another vehicle location. The data record created by device **40** in response to the here button **102***i* includes at least the longitude and latitude information corresponding to the vehicle position at the time of button **102***i* activation. Additional textual information can be entered by the user if desired, e.g., textual information entered by operation of control inputs **102** in response to supporting prompts presented on display **100**. For example, the user may wish to name a location in conjunction with activating the here button **102***i* for meaningful later reference thereto.

FIG. **4** illustrates programming of microprocessor **60** for information collection from data broadcast **26**, i.e., in this case in response to activation of where information button **102***f*. In FIG. **4**, it will be assumed that voice broadcast **22** and data broadcast **26** are associated by simultaneous broadcast. As may be appreciated, other association methods may be employed and incorporated into the illustrated embodiment of the present invention. Processing in response to user activation of the where information button **102***f* begins in block **140** where microprocessor **60** collects the most recently received data record of data broadcast **26**. As shown in the present embodiment, voice broadcast **22** and data broadcast **26** are associated by simultaneous presentation and microprocessor **60** need only collect in response to activation of the where information button **102***f* the current presented or most recently presented data record in data broadcast **26**. In anticipation of such task, microprocessor **60** always collects in an input buffer (not shown) each data record presented in data broadcast **26**. For each new data record presented, the old, previous data record is replaced in the input buffer. Thus, when the operator activates where information button **102***f*, the input buffer holds, or will soon hold, a complete data record taken from data broadcast **26** and associated with the current voice broadcast **22** presentation. Thus, processing in block **140** implements a method of association between voice broadcast **22** and data broadcast **26**.

Decision block **142** determines whether the current voice broadcast **22** is related to the most recently received data record. For example, not every voice broadcast **22** presentation, e.g., advertisement, will have an associated data record available in data broadcast **26**. For example, if the data record most recently received by way of data broadcast **26** is "stale" then it should not be taken as related to the current voice broadcast **22** presentation. In such case, processing branches through block **144** where device **40** presents on display **100** the message "where information not available" and processing terminates. If, however, the data record most recently received is related to the voice broadcast **22** presentation, i.e., not "stale", then processing advances to block **146** where microprocessor **60** obtains the current vehicle location and vehicle orientation. As may be appreciated, determining whether a given data record is "stale" may be implemented by time-stamping data records held in the input buffer. The length of time required to become "stale" in the input buffer is variable and a function of how quickly the operator of vehicle **10** must activate the where information button **102***f*.

Microprocessor **60** then calculates in block **148** the angle portion **100***b* and distance-to-travel portion **100***c*. In other words, microprocessor **60** calculates and angle of orientation for the arrow icon presented in portion **100***b* using the current vehicle orientation **106** and the direction of travel toward the subject geographic point of interest **14**. Microprocessor **60** then calculates the distance-to-travel value for portion **100***c* as the separation between the current vehicle position and subject geographic point of interest **14**.

As may be appreciated, a timer interrupt may also be set to itteratively execute procedures updating the display portions **100***b* and **100***c* as the vehicle changes orientation and location relative to the geographic point of interest **14** associated with the current data record. Furthermore, microprocessor **60** may take into account fuel remaining input **92** in comparison to expected vehicle **10** mileage and consider separation between current vehicle position and the subject geographic point of interest **14**. If vehicle **10** holds insufficient fuel to make the trip to the subject geographic point of interest, an appropriate display may be presented to indicate such condition to the vehicle operator.

Continuing to block **150**, microprocessor **60** presents in display portion **100***a* the text message portion of the current data record, e.g., vendor name, address, phone number, and any other special promotional information provided. In decision block **152**, the operator has opportunity to keep for permanent storage the current data record, in which case processing branches through block **154** where the current data record is stored for later reference, i.e., by operation of the stored information button **102***g*. Otherwise, processing exits directly from decision block **152**.

FIG. **5** illustrates by flow chart an alternative method for gathering information from the data broadcast **22**, i.e., gathering information automatically according to user-designated criteria in response to filter button **102***h*. In this manner, the operator need not monitor voice broadcast **22** to collect information of potential interest by way of data broadcast **26**.

In FIG. **5**, processing begins in block **180** where microprocessor **60** obtains, from the user, appropriate filtering criteria. For example, user interaction is conducted by way of display **100** and alternate functions defined for control inputs **102** to collect from the user a designation of filter criteria. For example, the user may be interested in all data records broadcast and being associated with a location within a given distance of current vehicle location. In this manner, the user collects advertising information for vendors in close and convenient proximity to current vehicle location. Also, data records are classified according to category, and the user designates as qualifying under user criteria certain categories of information. For example, the user may be interested in certain types of products or services advertised and having associated data records in data broadcast **22**. In any event, block **180** represents user

designation of criteria applied to data records appearing in data broadcast **22**, i.e., which of those data records will be accepted and stored by device **40** for later reference by operation of the stored information button **102***g*.

Continuing to block **182**, microprocessor **60** gets the next data record provided in data broadcast **22** and, in decision block **184**, applies the user-designated criteria. If the data record collected in block **182** meets the user-designated criteria provided in block **180**, then processing advances to block **186**. Otherwise, processing returns to block **182** from decision block **184** to collect the next data record appearing in data broadcast **26**. In block **186**, microprocessor **60** obtains the current vehicle position and orientation. Continuing to block **188**, microprocessor **60** calculates and displays the arrow icon at appropriate angle of orientation and the distance-to-travel value in display portions **100***b* and **100***c*, respectively.

Then, in block **190**, microprocessor **60** displays the text message data available in the collected data record. An alarm presented in block **190** indicates to the user collection of a data record potentially of interest, i.e., satisfying the user-designated criteria provided in block **180**. Decision block **192** allows the user opportunity to discard or keep for permanent storage the data record just collected. Accordingly, if the user declines storage of the just-collected data record then processing returns immediately to block **182**. Otherwise, processing advances through block **194** where the just-collected data record is stored for later reference by operation of the stored information button **102***g*. Processing then returns from block **194** to block **182** for collection of a next data record.

As may be appreciated, an exit procedure (not shown) interrupts the data record collection loop represented by flow chart in FIG. **5**. For example, the user may wish to terminate collection or may wish to modify the designation of data record collection criteria in block **180**. Furthermore, processing at decision block **192** need not forego collection of additional data records in data broadcast **26**. In other words, additional records may be queued for review by the operator even though microprocessor **60** is awaiting input at decision block **192**. Also, should the operator not respond immediately at decision block **192**, a time-out feature allows processing to advance without requiring user input, e.g., accepts for storage the data record qualifying under the user designated criteria and allows the user to later delete the record from device **40**.

FIG. **6** illustrates by flow chart processing conducted by the radio broadcast system **20** in providing associated voice broadcast **22** and data broadcast **26**. In FIG. **6**, processing begins in block **200** where radio broadcast system **20** receives an advertising subscription including both voice advertising for presentation in the voice broadcast **22** and message information for presentation in the data broadcast **26**. As noted herein above, association between the voice advertisement and message data is by simultaneous broadcast. Thus, system **20** transmits in block **202** the text message information and location information in data broadcast **26** followed by transmission of the voice presentation in voice broadcast **22**. As may be appreciated, processing in blocks **202** and **204** repeats intermittently, i.e., according to how often and when the dual channel advertisement is to be broadcast.

FIG. **7** illustrates programming for microprocessor **60** in response to activation of the stored information button **102***g*. In FIG. **7**, processing begins in block **220** where microprocessor **60** presents opportunity for the user to scan stored data records according to a given criteria, i.e., get a display selection from the user of device **40**. For example, the user wishes to display data records according to a certain sequence or to display only records meeting a certain criteria, e.g., restaurant advertisements. Having obtained a display selection from the user, processing advances to block **224** where microprocessor **60** gets a next data record according to the user-designated display selection. Continuing to block **226**, microprocessor **60** obtains the current vehicle position and orientation. Then, in block **228**, microprocessor **60** calculates and presents display portions **100***b* and **100***c*, i.e., displays vector information indicating the distance and relative orientation to a geographic point of interest **14** corresponding to the data record currently presented. Continuing to block **230**, microprocessor **60** displays at display portion **100***a* the text portion of the data record for review by the user. Decision block **232** provides the user opportunity to terminate scanning of stored information in which case processing exits from decision block **232**. If the user continues scanning through the scored data records according to the designated display selection, then processing returns from decision block **232** to block **224** where a next data record in the sequence is selected for review by the user.

Important to note, as the user scans through stored data records and obtains a presentation on display **100**, the then-current vehicle orientation and location are referenced to present a then-current relative position in display portions **100***b* and **100***c*, i.e., the current relative direction of travel and distance to the geographic point of interest **14** associated with the data record currently displayed by device **40**. Also, processing illustrated in FIG. **7** initiates a timer interrupt procedure updating display portions **100***b* and **100***c* as the vehicle orientation and location relative to the currently displayed geographic point of interest **14** changes.

The scanning procedure illustrated in FIG. **7** may, as will be appreciated, be augmented to include additional features such as deleting data records, sorting on various fields of the text message portion, and applying additional category values whereby the user may better manage a collection of information maintained in device **40** and relevant to travel of vehicle **10** to and from geographic points of interest **14**.

Thus, an improved vehicle information device and method of operation have been shown and described. Under the present invention, a user builds a customized database containing geographic points of interest, including precise longitude and latitude information and ability to provide distance and orientation of travel toward the geographic point of interest and in relation to the current vehicle location. In this manner, the user obtains useful information by way of radio signal without requiring reference to a massive digital database of the surrounding geographic area. Information obtained by radio signal is always current, i.e., replaced by subsequent broadcast. In this manner, the operator maintains a dynamic and up-to-date database of specific geographic points of interest.

It will be appreciated, that the present invention is not restricted to the particular embodiment or embodiments that have been described and illustrated herein, and that variations may be made therein without departing from the scope of the invention as found in the appended claims and equivalents thereof.

What is claimed is:

1. A method for providing specific time and location sensitive advertising information to a moving vehicle, said specific time and location sensitive advertising information being selected from a large body of advertising information

including a large number of records, each record including a specific time and location sensitive advertising information, the method comprising the steps:

transmitting to said vehicle by radio time said large body of advertising information,

receiving at said vehicle said large body of advertising information;

at a specific time, determining the location of said vehicle; and

selecting for display at said vehicle one of said records for display, said selection being at least in part based on the time of day and upon the location of said vehicle.

2. A method of providing time and location sensitive advertising information to the operator of a moving vehicle, the method comprising the steps:

receiving multiple data records by radio signal, each data record containing time of day information and location sensitive advertising information;

storing said data records;

calculating current location for said vehicle; and

selecting for display one of said records containing time of day information and location specific advertising information depending upon the time of day information and the location of said vehicle;

displaying said selected record containing time of day information and location specific advertising information.

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